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SURGERY IN CANCER: A CRITICAL STUDY.

BY SEELYE W. LITTLE, M.D., ROCHESTER, N. Y.

As a preliminary to this study it is essential that certain things be understood.

The term "Surgery" in the title includes all methods designed to cure cancer by the destruction or removal of the pathological new growth as well as all methods designed to prevent cancer by the destruction or removal of the so-called "pre-cancerous" lesions. In both classes, curative and prophylactic, the knife, of course, is overwhelmingly the commonest instrument used, though for the purposes of this argument I include under the titular head of "Surgery" the use of such instruments as x-ray, radium, caustics and the like.

The term "Cancer" in this essay, unless otherwise specified, includes not only the pathological new growth called cancer in the older classification,—perverted epithelial cell growth,—but all malignant pathological new growths. Here, again, however, just as the knife leads in the list of instruments of surgery, so cancer, in the older, more restricted sense, is numerically far ahead of all other malignant pathological new growths; even sarcoma of the old classification is a poor second.

So that practically the argument really concerns knife surgery, and cancer in the sense of that term say twenty years ago.

Unless otherwise stated, the figures are derived from Hoffman's work, "The Mortality from Cancer throughout the World" (1915), in which the official sources of his information are stated; or from the monumental publication of the United States Census Bureau, "The Mortality from Cancer and other Malignant Tumors in the Registration Area of the United States" (1916).

It should be stated that the argument in this essay and the conclusions from that argument are unlooked for by-products, so to speak, of a much wider and more fundamental investigation carried on during the past ten years, and are neither the result nor the object of a predetermined investigation limited to "Surgery in Cancer" alone. Much less was the result of the argument herein set forth forseen or even thought of beforehand, though it might have been absolutely predicted in the light of other phases of the wider investigation just mentioned.

Finally, if there is no flaw in the argument which is based solely upon accepted facts and upon the largest and most reliable cancer figures which we have,—if there is no flaw in the

argument, the conclusion, disconcerting though it may be, must be accepted and faced.

The claim that the disease called cancer may be cured by the complete removal or destruction of the pathological new growth which gives the disease its name and which is the one known invariable thing without which the disease does not exist, predicates that the disease, cancer, and the pathological new growth, the "cancer," are identical. If they are not identical and if the claim is justified, it follows either that here is one disease which may be cured by the complete destruction or removal of its one known invariable symptom or manifestation; or that, while *a* cancer does not constitute the disease cancer, yet it alone contains the essential germ, or poison, or thing, that makes the disease possible, and that, therefore, the removal of *a* cancer cures cancer.

It is childish nonsense, not to say homeopathy, to claim that any disease may be cured by removing any one or all of its symptoms in any other way than by the removal of the disease itself.

Is *a* cancer identical with the disease cancer? Or does *a* cancer alone contain the essential thing without which the disease cancer is impossible? If neither of these two alternatives is true it follows that destruction or removal of *a* cancer *per se* never has, nor ever will, cure the disease cancer, and it also follows that one has no justification in claiming that complete removal or destruction of a cancer, or of any number of cancers, may cure the disease cancer. The acknowledged fact that many individuals, after having had their cancers removed or destroyed, have lived for years after that event, and, meanwhile innocent of *a* cancer, have finally died from some disease other than cancer, is a mere *post hoc, propter hoc* argument. Those who, nevertheless, accept it as a valid argument are forced to the assumption that "all the cancerous tissue was not removed" in the tragically numerous cases in which that assumption must be made to uphold the logic.

Is *a* cancer identical with the disease cancer? Does *a* cancer alone contain the essential thing without which the disease cancer is impossible? If the second question can be negatived the first of necessity is also negatived. Let us then consider the second question.

The essential thing, *i.e.* the cause, without which the disease cancer is impossible, is unknown. But that essential, whatever it may be, must conform to certain known facts, some positive in nature and some negative, though none the less binding.

The cause of cancer must exist everywhere in the inhabited world, because cancer is endemic everywhere in the inhabited world. It must be capable of being effective at all ages, in both sexes and in every race, color, status of civilization and in every walk of life. It must be a cause that has persisted for hundreds of years, certainly since the time of Hippocrates, Celsus, and Galen. (Hoffman, Woglom, Crocker Research Laboratory Reports, etc.) This fact alone rules out as the essential cause anything, any condition, any article of human intake, any circumstance that has not existed continuously and in every region of the earth having a record of cancer from before the Christian era to the present time. Furthermore, it must be a cause which is becoming increasingly able to produce its result, but not among all peoples alike, nor everywhere alike. It must be such a cause as will explain the very remarkable variations in the rate of incidence and in the choice of site under each of these heads. For instance, it must explain why it is so effective a cause at and after middle life, so rarely effective in infancy, so increasingly effective among the highly civilized peoples, and so rarely effective comparatively among savages and semi-civilized peoples; why it produces its effects much more often in whites than in negroes, why women are more susceptible, in general, than men, and yet why men have cancer of the skin, for example, oftener than women. It must account for the remarkable incidence of cancer at the site of chronic injury or irritation, but not in young people at such sites very often nor in most people at any site; for the relative frequency of cancer in particular regions of the body and the rarity of cancer in other regions. It must be a cause which, once effective, practically never lets up but becomes increasingly effective until the death of the individual affected. It must be a cause not transmissible by any known means from one individual to another, either before or after the death of the individual affected. It must be a cause not coming from outside the affected individual unless we grant also some inherent cause in such an individual to render the extraneous cause effective. That is, if the cause is an extraneous one, and there is no essential inherent cause, we must assume that

all affected individuals are what we call, in the case of bacterial diseases, susceptible; while all others, which means all other people on earth, are not susceptible; and we must further assume that, contrary to susceptibility in all other known disorders produced by extraneous causes, such susceptibility increases in a truly remarkable way at and after middle life. Aside from mechanical injuries, the only known ways whereby an extraneous cause produces pathological effects in humans are by way of the alimentary canal, by breathing apparatus, and by introduction through the body surface. If the cause of cancer, then, is an extraneous cause it must be a cause capable of exerting its effects elsewhere than where it gained entrance; in other words, a cause diffusible throughout the body, that is, a cause carried by the circulatory apparatus. If such is the case it is impossible to explain in any way how or why an extraneous cause, increasingly effective and permanent, circulating in the blood, never has been known to produce its effect in another individual by being introduced into his blood, as must have happened literally thousands of times in the case of surgeons, nurses and attendants. Furthermore, cancer is usually single and that is still more difficult to explain on this basis. So for many reasons we are forced to the conclusion that the cause of cancer must be an intrinsic cause in the individuals affected and not primarily or fundamentally a cause introduced from the outside.

The cause of cancer must be something capable of explaining the presence in an affected individual of embryonic cells in a place where no such cells normally exist and it must explain why these embryonic cells persist in remaining embryonic cells to the end of the chapter; why they thrive and multiply indefinitely at the expense of the normal cells about them and throughout the body, and why thay are always embryonic cells of the same type as the embryonic ancestral cells of the normal cells among which they first appeared.

The cause of cancer must explain certain definite though little understood changes in the metabolism of lime and sugar that are known frequently to occur in individuals having cancer. It must explain the remarkable incidence, great or small as the case may be, of cancer relative to the incidence of certain other diseases, notably diabetes mellitus. It must be compatible with our inability to transplant successfully living cancer cells to another individual in spite of the fact that normal cells may often be transplanted successfully. Finally, it must explain metastases, and recurrences at any time after removal of the original growth; why in one case a metastasis occurs within one month, in another case after three years, and in another case never; why recurrences exhibit the same peculiar time relations.

In view of all this and of other facts that will readily occur to the student of cancer, it is obvious that *a* cancer is neither the disease cancer nor does it contain the cause of the disease permanently, if indeed it ever does.

Therefore one is never justified in claiming that removal or destruction *in toto* of *a* cancer will, or even may, cure the disease cancer. It *may not*, as we admit; it cannot, as we shall admit one day. Indeed, we tacitly and ostrich-foolishly admit now that removal of *a* cancer never cures cancer. We *call* it a cure if the patient survives cancerless for five years. (It used to be three years). If a cancer appears before that time we admit that the operation did not effect a cure; if a cancer appears a day after the five years are up we *call* it a brand new cancer having no connection with the former cancer because that cancer was "cured"! There is no time limit to a cure. If cancer, or any other disease, is cured it stays cured so far as that instance is concerned. If cancer or any other disease appears again after a cure it is simply a fresh attack of that disease whether it occurs ten days or ten years after the original attack. Also, it is well to remember that a disease may exist after an apparent "cure" without ever giving any clinical evidence of its continued existence. Syphilis, for example.

So much for logic. Now let us apply the newer, more fashionable pragmatic test. If removal or destruction of *a* cancer actually does cure the disease cancer, or if removal or destruction of precancerous lesions does actually prevent cancer,—so much the worse for logic. One can afford in that case to allow logic to go to a place where coal is a drug on the market.

It is an indisputable fact that in all civilized countries the death rate from cancer is, and has been for years, steadily increasing. It is also an indisputable fact that in all civilized countries medical men in general have urged and have practiced more and more the complete and early removal of all cancers and of all abnormalities that experience shows might subsequently become

sites for cancers; at least where such removal is practicable. This teaching and this practice have been increasingly followed out not only in private by medical men everywhere but publicly and officially by medical societies, cancer research associations, and health departments. The civilized public has been widely lectured and circularized upon the subject. That this teaching has had some effect is shown by reports from various sources, such as Johns Hopkins and the Mayo Clinic, that people suffering from cancers are actually presenting themselves for treatment sooner after the beginning of the disease than they formerly did.

We have, then, to face the fact that deaths from cancer, relatively to population, are increasing at the same time that surgical removal of cancers is increasing, and earlier surgical removal at that.

This does not at all necessarily mean that the increasing cancer death rate is due to the increasing surgical treatment of cancer, though, as a possibility even, such a thought is a horrible nightmare. It does mean, however, that our increasing surgical assiduity with reference to cancer is not resulting in a decrease in the death rate from cancer. If surgery can bring about that desirable result it is more surgery we need, not less. Can it conceivably produce such a result? Never, if the logic already presented is correct. But, logic or no logic, does surgery actually result in a lesser cancer death rate than would confront us if surgery were abolished as treatment for cancer? Disregarding argument, that question could be answered only by trial extending over several years and among a large population. It would be the height of foolhardiness to make such a trial in the present state of our knowledge, because we know that cancer surgery sometimes, though all too rarely, is followed by clinical freedom from cancer for years or even for the balance of a long life; and because we also know that, without surgery, the average cancer victim is doomed to die within two years. On the other hand, many a patient with a cancer and without surgery lives with that cancer for years, or even to the end of a long life, with no evidence of the disease cancer other than *a* cancer. Reference is made, of course, to many cancers of the breast in old women and to certain cancers of the skin. Also there are a few cases, apparently authentic, of cancers which have disappeared spontaneously. Finally, we have no way of telling whether or how often surgical removal of a supposed cancer which turned out not to be cancer may be followed by the appearance at the site of operation of a real cancer, as a direct result of the surgical interference. Such an event does happen whether or not due to the surgery. It is soothing to the surgeon who has such an experience to know that cancer rarely occurs at the site of any operation save only the site of a former operation for the removal of a real cancer!

Does the surgical treatment of cancer on the whole, taking all cases as they come, offer a longer lease of life to cancer patients than they could expect without surgery? Here we have a partial answer to one side of the question. We have a little information as to how long a few individuals have lived with cancers and without surgery. We have also some data as to how long a considerable number of cancer patients lived after it was known that they had cancer, but how many of these had the advantage of surgery and how many had not is not stated. We know from records by the older observers, of the time before there was much operating for cancer, how long these patients generally lived after the growth was noticed and with no attempt at removal. In the American Text-book of Surgery (1893), it is stated, for example, that without operation the average duration of life in the fibrous form of cancer of the breast is about thirty months, in the soft form about twelve months. Whatever may have been the truth at that time this average duration is far too short at the present time. The history records of any present day observer will prove it in the comparatively few cases observed by any one man. For example, in the *Boston Medical and Surgical Journal,* Nov. 21, 1918, Dr. C. C. Simmons reports that in 150 cases of cancer of the breast the average length of time the patients had noticed symptoms before consulting a medical man was 12.5 months. After a lapse of time averaging 3.5 months more 129 of these patients were advised to undergo operation. After an average period of 1.3 months more than 121 of these patients actually had their operations. In all, a period averaging 17.3 months duration of the disease and still operable! Surely if they were still operable they had an expectation of several months life without operation. And according to the older estimate practically every one of the 150 cases must have been of the scirrhous variety because the

"soft" kind live on the average only "about 12 months." Without doubt these 150 cases included the usual proportion of "soft" cancers.

The point to be emphasized is this: From the exact data just quoted and from other scattered data bearing on the subject, it is fairly within the truth to say that, without surgical interference and having reference to all cancer patients, the average length of life is at least two years from the time the patient first notices symptoms of the disease. This is admittedly an estimate from the very scant data available, but it is certainly not too far from the truth.

The New York State Institute for the Study of Malignant Disease, 1913 (quoted by Hoffman), reports that among 2380 patients dying from cancer the average duration of the disease from beginning of noticeable symptoms to death was, for males, 22 months, and for females, 26 months. As these cases include indiscriminately both the surgically treated cases and all others, though in what proportions is not stated, it is plain enough that surgery did not make much of an impression in this instance on lengthening the average life of cancer patients. Nor did surgery in New York State, either by "cures" or by lengthening the average duration of life of cancer patients have any effect upon the steady and almost uniform yearly increase in the cancer death rate. The death rate increased from 66.7 per 100,000 population in 1900 to 87.8 in 1913. Indeed the record is worse for the last six years of this period than for the first six years. The increase from 1900 to 1906 was 8.9, and from 1907 to 1913 the increase was 10.1 per 100,000 population. One would expect the contrary if the "operate early and thoroughly" teaching and practice of the past dozen years is sound. Such teaching and practice undoubtedly have prolonged the lives of a considerable number of cancer patients and have a comparatively few clinical "cures" to their credit. But this is the pragmatic part of the argument, concerned with the actual working of the plan. Let us grant, for the sake of making it as favorable as possible for the pragmatic side, that if every operable cancer could be operated upon within say three months of its discovery, there would be a far greater number of "cures." Not only may this be granted, but it is without doubt the truth. There is another side to the picture, however. In the first place, the more cancer operations, early or late, the more operative deaths, thereby counterbalancing more or less the "cures." The more cancer operations, the more recurrences and therefore the further increase of both operable and of inoperable cancers if not of the disease cancer. By the way, more than one half of the cancers of the breast included in the report of Dr. Simmons were *inoperable postoperative recurrences*. He also notes that "many" of these patients with inoperable recurrences had evidently been given the benefit of the "complete" operation. Of 80 cases operated upon, because deemed operable, 21 died within one year; 41 died within two years; 60 died within three years; 9 were still alive with recurrences; the average duration of life after operation was 31.7 months. This is not a remarkably encouraging record, particularly when one remembers that all the cases were treated at the Huntington Hospital in Boston, Massachusetts,—a state and a city and a hospital noted for leadership in such matters. Pragmatically and as a matter of hard fact, a very minute minority of cancer cases can possibly have such advantages. Bearing this in mind let us consult the cancer mortality records of Boston, of Massachusetts, and of the registration area of the United States as a whole. And let us ponder.

	Rate per 100,000 population.	
	1901	1913
Boston	80.1	117.5
Massachusetts	73.1	99.4
U. S. Registration Area	64.3	78.9

It might be urged that these figures state the case unfairly because there are more people of cancer age in New England in general than in the rest of the country in general, and therefore there would naturally be a far higher cancer incidence; and a far higher cancer death rate. That point deserves consideration. Unfortunately there are no figures available for analysis with reference to that particular point and with reference to the particular regions covered by the foregoing table. But some light may be found elsewhere.

New York City considers itself and is considered generally, (save possibly by the natives of Boston), a progressive and active medical and surgical center. Rochester, N. Y., is certainly as far removed from being an active, progressive, and scientific medical and surgical center as could well be imagined. As an instance proving this statement, the largest and best equipped hospital in Rochester, N. Y., has not furnished

an average of 10 autopsies a year for certainly 20 years!

In 1910, New York's cancer death rate at age 35 and over per 100,000 population *of age 35 and over* was 245. Rochester's rate *on the same basis* was 169. Of Rochester's population in 1910 no less than 55% was at age 35 or over; of New York's population less than 31% was at age 35 or over (U. S. Census). Theoretically Rochester should have had relatively a far greater cancer incidence and a far greater cancer death rate, taking the *entire* population in each case as the basis of comparison. Theory and fact agree in this respect.

Cancer death rate per 100,000 *total* population in 1910:

Rochester	95.8
New York	77.8

But taking into account only the population, in each case, *of cancer age,* surgically unprogressive Rochester is immeasurably ahead of surgically progressive New York as just shown.

New York City cancer "progress" may be compared with Rochester's lack of the same in another and perhaps still more disconcerting way.

Cancer death rate per 100,000 total population:

	1901	1911
Rochester, N. Y.	92.5	91.8
New York	69.0	79.0

During these ten years Rochester's rate has been fairly steady, averaging around 90.0, rather a high rate except when one recalls that 55% of the population is of cancer age. New York's rate during the same ten years has steadily and uniformly increased. Moreover, New York's cancer death rate, though apparently lower than the average, is actually very high considering that only about 30% of the population is of cancer age.

In view of these figures, Boston's very high and *increasing* cancer death rate can scarcely be explained away on the ground that Boston has an unusually large population of cancer age. Nor can New York's low cancer death rate be explained on the operate-early-and-often plan of cancer treatment. Particularly difficult is it to explain on that basis New York's *increasing* cancer death rate; and it is impossible on that basis to explain New York's tremendously high actual cancer death rate and its persistently increasing highness. Or (that nightmare again) is New York's cancer death record perfectly explainable?

And what is one to say about Rochester's actually rather low cancer death rate (considering the proportion of the population at cancer age), and particularly about the fairly stationary death rate during those ten years? Neither in those years nor at any other time has Rochester followed out the universal injunction to "operate early and thoroughly" in cancer. This is not because Rochester physicians do not approve of that dictum, but because they have not in general the scientific medical acumen and attention to detail needed to make an early diagnosis of cancer; and because very few Rochester surgeons have the training and skill to do any complete operation in a first class manner. Nor is this state of things peculiar to Rochester, N. Y. It exists all over the country except in the great medical centers such as the other Rochester, Boston, Philadelphia, Baltimore, and possibly a few other places. This pragmatic fact cannot be denied. Nor can the other pragmatic fact, explain it as we may, that the cancer death rate is higher and increasing faster in the great medical centers of this country than in the comparatively unprogressive medical centers. That, of course, is not true of diseases other than cancer which are curable or remediable only by painstaking and scientific methods of diagnosis and treatment.

From another angle, surgery as a treatment for cancer is put upon the defensive by the pragmatic test. In what class of cancer ought one to expect that the earliest diagnosis could be made and consequently early operation would be most common? In what class of cancer is operation technically the least difficult? What class of cancer offers on the whole the best chance of success from operative measures? What class of cancer is from beginning to end directly under view? Cancer of the skin answers all these questions quite satisfactorily. What class of cancer theoretically can be best prevented by the surgical prophylactic measure of removing "precancerous" lesions? Again, cancer of the skin. What class of cancer is most liable to be quickly noticed by the patient and concerning what class of cancer will a patient consult a physician soon after he discovers it? Cancer of the skin, because it is usually disagreeably conspicuous on face or hand.

Such being the case, cancer of the skin ought surely to demonstrate, if demonstration is any-

where possible, the beneficent result (a gradually decreasing death rate), of curative and prophylactic surgery as applied to cancer. Cancer of the breast would also answer the above questions satisfactorily and serve equally well as a demonstration except for the fact that American ladies have a praiseworthy disinclination to exhibit their breasts except in the privacy of the ball room. Even with that handicap, cancer of the breast probably is second only to cancer of the skin in its liability to early discovery, its coming early under the observation of the physician, its early diagnosis, its comparatively safe operability, and in the opportunities the female breast presents for the removal of "precancerous" lesions. Let us examine the cancer death rates of cancer of the skin and of cancer of the breast for proof that surgery is justified in the treatment and prophylaxis of cancer.

For the sake of comparison let us take also the figures showing the death rates from all cancers as a sort of standard; and from cancer of the stomach and liver as an example of a cancer comparatively difficult of early diagnosis, and rarely discovered in time for reasonably hopeful operability, of difficult operability at the best, and a cancer offering the slightest opportunities for surgical prophylactic work to any save the most painstaking and accurate diagnosticians and surgeons.

CANCER DEATH RATE PER 100,000 POPULATION IN THE U. S. REGISTRATION AREA, 1900-1914.

	ALL CANCERS.	SKIN.	FEM. BREAST	STOM. AND LIV.
1900	62.9	2.0	9.1	22.5
1901	64.3	2.2	10.4	22.6
1902	65.1	2.1	10.9	23.4
1903	68.3	2.3	11.0	25.1
1904	70.2	2.3	12.2	26.2
1905	71.4	2.4	11.5	26.2
1906	69.1	2.3	11.7	26.1
1907	70.9	2.6	12.3	27.0
1908	71.5	2.7	13.2	27.9
1909	73.8	2.9	14.4	29.3
1910	76.2	2.7	14.2	30.6
1911	74.3	2.7	14.5	29.3
1912	77.0	2.9	14.9	30.6
1913	78.9	2.7	14.7	31.2
1914	79.4	2.9	16.6	30.1

It will be seen that under each of the four headings in the table there has been on the whole a steady increase in the death rate from 1900 to 1914. The important thing, however, for the present discussion is the percentage increase under each head.

Deaths from cancer in general increased...26%
Deaths from cancer of stomach and liver...33%
Deaths from cancer of the skin.....45%
Deaths from cancer of female breast.....82%

Comment is superfluous. The appeal to pragmatism not only confirms the appeal to reason but it arouses again the horrible suspicion that the surgical treatment and prophylaxis of cancer, instead of curing and preventing cancer, actually and enormously increases the death rate from cancer and the incidence of cancer. It is not fair to make that *post hoc, propter hoc* assumption, however. There may be some other explanation for the undoubted facts set forth above. But that other explanation, if it exists, should be made very clear before one is justified in advising the surgical removal at the earliest possible moment of every operable cancer, of every "suspicious" growth, and of every possible "precancerous" lesion.

Meanwhile, what is the honest, conscientious, informed physician to do when asked for professional advice by a patient with *a* cancer, a possible cancer, or a possible "precancerous" lesion, assuming in each case that the abnormality is obviously operable?

Taking his honesty, his conscience, and his information with him, the physician should put himself in the patient's place, bearing in mind the patient's sex, age, race, financial and domestic condition, family history, physical condition, mental status, previous history, habits, occupation, and general environment. He should then advise the patient to do exactly what he would decide to have done to himself under all the circumstances, *including* the surgeon involved. This last item is important. In the *Medical Record*, Oct. 10, 1914, in an article by Dr. Isaac Levin, Halstead is reported to claim that 38.8% of his cases of breast cancer operated upon, remained well for *three* years or more. Wertheim, according to Dr. Levin, claims 25% of "cures" from his operative treatment of uterine cancer. Taking Dr. Wm. J. Mayo's report on 996 cases of stomach cancer, Dr. Levin shows that in the hands of a Mayo only about 9% of stomach cancers may be "cured" by surgery alone. He sums up by saying that "in all rather less than 30% of cancer patients can hope to be cured by surgery alone." (Surgery, in this article, refers to knife surgery).

If Halstead, Wertheim, and Mayo make no greater claim for surgery in the treatment of cancer than this, what is to be said for the rank and file of surgeons?

Dr. Levin makes one more remark pertinent to this discussion. He says, "only in carcinoma

of the lip the radical cure by the aid of the so-called block dissection of the tumor and the regional lymph glands is as high as 70 to 83 per cent." It is well known that lip cancer offers, perhaps more than skin cancer, hope for radical "cure" by the surgical route, though "seventy to eighty-three per cent." seems a little high. Be that as it may, it is interesting to know that in England (the only available figures on this particular point), the mortality from cancer of the lip increased 15.2% in the years 1901-1910 as compared with the mortality in the years 1899-1900.

It seemed unnecessary to cumber this study with a multitude of tables and figures, a thing which would have been easy to do. The figures given are by no means exceptional. In fact, with one notable exception, all available and reliable figures covering large numbers of cases have the same general trend as the figures given. The exception referred to is the record of deaths from skin cancer in the city of Greater New York. As recorded, the death rate from cancer of the skin in New York City diminished in the dozen years ending in 1914 something over 60%. However, even that instance deals with comparatively few cases. In no year were there more than 83 deaths from cancer of the skin in New York City.

If the unavoidable conclusions of the investigation herein outlined are truths, they are truths of the utmost importance:—namely, that surgery never has and never can cure cancer by removal of "cancers;" that it is extremely doubtful whether removal of "precancerous" lesions prevents even "cancers;" that such removal certainly cannot prevent cancer, the disease; that our teaching and practice in the matter are absolutely incorrect because we are attacking only a symptom or manifestation instead of the disease; that this teaching and practice have proved not only worse than useless in controlling the disease but that, in one respect at least (recurrences), such teaching and practice actually increase the number of "cancers" and persistently tend, by their false though generally accepted assumptions, to divert cancer research in wrong directions; that, as at present taught and practiced, the most that surgery in cancer can do is to prevent possibly a few "cancers," to relieve, more or less, suffering *in some cases*, in some cases to prolong life a few months, in a comparatively small number of cases for a few years, and in a very small number of cases for many years.

If the conclusions reached in this study are *not* warranted, that fact should be demonstrated.

Meanwhile it is certainly true that the surgical treatment of cancer, illogical and impotent as it is, is in general the best treatment we have for cancer, though a very poor best. But if our argument is correct we are disastrously overemphasizing this very poor best.

METHOD OF MAKING THE IODO-TANNIN-GLYCERIN COMPLEX.

BY CLAËS JULIUS ENEBUSKE, M.D., CAMBRIDGE, MASS.

DESCRIPTION of the method used in making the iodo-tannin-glycerin complex, which is the dynamic factor of the chemo-therapeutic orthoarteriotony, by the aid of which the toxaemic cause of abnormal arterial tension (dysarteriotony), has been experimentally proven by the author of this inquiry.*

In the year 1905, the author read in a French textbook on therapeutics the following words: "Introduit dans le sang, ce metalloid (l'iode) s'y combine avec le sodium et y circule sous forme d'iodure de sodium. Mais il n'est pas démontre qu'il ne forme pas des combinaisons spéciales avec les albuminoides—*on en est réduit sur ce point à des hypothèses ou à des expériences in vitro toujours sujettes à des interprétations différentes.*"

The textbook referred to was written by X. Arnozan,† Professor of Therapeutics in the Faculty of Medicine in Bordeaux, and was included in a collection of medical textbooks edited by L. Testut, Professor in the Faculty of Medicine in Lyons, with the collaboration of forty professors of the medical faculties of Paris, Lyons, Bordeaux, Montpellier, and Toulouse. Thus the words quoted may be considered an authentic declaration to the effect that French Science has not solved the problem of organic reaction by iodine "introduit dans le sang" (*i.e.*, absorption of iodine by protein in the blood), and does not pretend to have discovered the action of organic iodine "in sanguine" in contradistinction to the action of io-

* Belongs to paper by Claës Julius Enebuske, entitled "Inquiry through analysis of measurements of the maximum tension of the radialis artery."

† X. Arnozan, Précis de Thérapeutique, Paris, 1903, Tome 1, p. 211.

dine, when, after resorption it directly reacts upon bicarbonate of sodium to form iodide of sodium and acts as iodide of sodium.

This problem of iodine-pharmacology, distinguishing between iodine as reacting directly upon bicarbonate of sodium in the blood on the one hand and reacting upon protein (or other organic properties) on the other, interested me particularly because at an earlier period of my life I had been engaged in original iodine research in writing a thesis for the degree of licentiate in philosophy (Lund University, 1885).

After many varied experiments with this problem for a number of years, I obtained, finally, through interaction of and in the presence of iodine, tannin, and glycerin, a completely soluble product without deposition of any insoluble by-product arising through the oxidation of tannin. The soluble product contained all the iodine not in the form of free iodine (with the exception occasionally of a trace of it). On further examination of this product, I found it to possess, besides other properties, the following ones:

1. It was capable of taking up nitrate of silver in an amount equivalent to nine-tenths of the iodine contained in it, forming a perfectly clear and transparent water solution in which even after twenty-four hours there was no deposit of iodide of silver, nor clouding of the solution.

2. It was capable of permeating living animal membranes and carrying all the iodine contained in it through such membranes without injury to them.

3. It possessed a close connection with protein in the blood: it formed a precipitate instantly on contact with colloidal protein, and this precipitate was easily dissolved again when there was a surplus of colloidal protein.

4. It possessed the remarkable physiological property of reducing the maximum tension of the radialis artery to the normal level of 150 mm. Hg., or in stricter terms higher than 140 mm., not exceeding 150 mm., in such disturbances of the arterial tension as occur in mental diseases and in certain other diseases.* This action manifests itself in these diseases both when the tension is too low (hypotension) and when it is too high (hypertension) in accordance with the description given in my article in the Boston Medical and Surgical Journal, Vol. clxxvii, No. 23, December 6, 1917, under the title of Orthoarteriotony.

5. It retained its dynamic and chemical properties without deposition of any insoluble precipitate, even after having been kept in a cellar four years.

The iodine-containing complex described above was made as follows:

Iodine, 1p.; tannin, 4p.; glycerin, 16p. Tannin was dissolved in glycerin by heating it in a water bath, then filtering it to a clear solution, and cooling it to about 60° Fahr. Tannin-glycerin solution and iodine were enclosed in a stoppered glass bottle and placed in a cylinder which by suitable mechanical arrangements was held in rotation, revolving about 15 times a minute. The bottle was placed on an oblique axis in relation to the axis of the cylinder in order to facilitate the thorough mixing of the content in the bottle without shaking it. The rotation continued until all the iodine dissolved. About one week was required to obtain the complete solution at a temperature of about 60° Fahr.

Only the purest grades of chemicals must be used. Even if satisfying the tests prescribed by the pharmacopoeia, the iodine must be resublimated; the purest white tannin should be used, and the glycerin must be absolutely neutral, free from the last vestige of reducent substance. When all the iodine is dissolved and is without any deposit of insoluble precipitate, this solution is left to stand at a temperature of 60 to 70° Fahr., until it does not contain free iodine or, at least, only a trace of it (pale violet color to chloroform).

From this solution as ground substance the active substance is extracted with ether. Immediately thereafter the ether is evaporated at normal temperature, and the residue (free from ether) is dissolved in glycerin and concentrated sugar solution. The titre of iodine is determined by analytical method and the product is preserved in the strength of 5% (or as desired). This product is destined for subcutaneous use and with due precaution can be used intravenously after dilution with physiological chloride of sodium solution. In a case of melancholia, a man 60 years of age, with the maximum radialis tension 260 m. m., Hg., reduction to 150 m. m. by the equivalent of 10 cgm. iodine took place within 2½ hours. It takes about six months before the ground substance is ready to be extracted with ether.

* Not in hemorrhage, shock, hypocystolia due to valvular lesion or degenerated myocardium, nor in adipositas, asthma, prostatic hypertrophy, etc.

A product may be obtained for use in shorter time. For this purpose the iodine-tannin-glycerin solution, after standing from two weeks to one month, is diluted with a concentrated sugar solution to a titre of 5% iodine. This solution may be used after having been kept standing at a temperature of 60° to 70° Fahr., for about two months. At about that time the amount of free iodine is reduced to less than 5% of the total amount of iodine contained in the product. Sugar for this product must be the purest kind, crystallized, pure white and formed in large crystals, and the water should be the purest distilled variety. A special laboratory is required.

The discovery of the action of this form of iodine (orthoarteriotony through organic reaction of iodine *in sanguine*) and the invention of the manner of making this iodine-complex is due to the fact that the experiments have been carried out by the following methods:

1. Formulation of the problem to find, experimentally, a chemical complex containing iodine and endowed with such chemical properties that, by its internal use, after resorption, iodine must be combined with or chemically react upon protein in the blood or in the tissues.

2. Not spending the oxidizing energy of iodine in such reaction as $I_2+H_2O+R=2HI+RO$; for this purpose water is excluded from the presence of iodine, tannin and glycerin until the active product is formed.

3. Observing that no insoluble by-product, arising through the oxidation of tannin, is deposited.

4. Controlling the chemical reaction by titration with one-tenth normal silver-nitrate solution.

5. Controlling the physiological action of the product by radialis-arteriotonometry.

If former investigators had been guided by the above mentioned considerations and measures during their experiments with iodine and tannin, the discovery of orthoarteriotony and its dynamic factor would perhaps have been made at some earlier period.

The author has also conducted experiments with a view to making the iodine-tannin-glycerin complex for subcutaneous use by some briefer procedure without loss of its physiological action. These experiments will not be concluded by the author, although they have been fairly successful. The author hopes that such experiments may attract the interest of some investigator who will continue them in such a way that the survival of the distinctive action of orthoarteriotony may be assured.

RULES TO BE OBSERVED IN ORDER TO MAINTAIN THE BIOCHEMIC ADAPTATION (OF THE DYNAMIC FACTOR) TO THE ACTION OF ORTHOARTERIOTONY.

When the iodine complex described above is to be used it is essential to observe strictly certain technical rules which safeguard the biochemic adaptation to the pharmacodynamic action of orthoarteriotony. The iodine-tannin-glycerin complex must be diluted with pure water only (not alkaline). The complex must not be mixed with other medicinal substances such as ammonia, fixed alkalies, carbonates of alkalies, alkaline earths, acids, alcohol, iodides, bromides, metallic salts, proteins, starches, oils, extractive substances of medicinal plants, pills, emulsions, decoctions, infusions, and similar substances, because they alter the chemical properties of the iodine complex. At the time when the iodine complex is taken the stomach of the patient must not contain starchy or proteinic residues from the preceding meal, nor must soda fountain drinks, nor beers, wines, alcohol, hydrochloric acid, acetic acid, acids derived from abnormal fermentation. The stomach must not be irritated; for then the dynamic factor may not be resorbed through the pyloric part of the stomach and the adjoining portion of the duodenum, but may be driven into a distant part of the small intestine and decomposed by interaction with carbonate of sodium, and thus the biochemic adaptation of the dynamic factor is lost.

A few rules will suffice to protect the biochemic adaptation of this dynamic factor:

1. It must be taken 15 to 30 minutes before a meal (empty stomach).

2. The patient should be at rest while taking it and for about 15 minutes afterwards, before beginning the meal.

3. Dilute the dose with 50 or at most 100 grams of pure water (not alkaline) and sip it slowly (to favor absorption through the mucous membrane of the pyloric part of the stomach or the adjoining portion of the duodenum before the reaction of the contents becomes markedly alkaline).

4. Do not afterwards force it further down by drinking additional liquids.

5. The 24-hour dose varies 5 to 12 cgm. iodine with exceptional cases of 15 to 25 cgm. If it does not exceed 15 cgm. iodine it may be taken at one time, 15 to 30 minutes before the noon or evening meal. If more than 15 cgm. is required, it is better to divide the daily dose in two or three portions.

6. Determine the dose by controlling the action upon the maximum tension of the radialis artery. This can only be done by means of the radialis-arteriotonometer. If in some cases it is found that 6 cgm. iodine taken on one day is sufficient to sustain a continuous tension of 140 to 150 m.m. Hg. for a whole week, it should be given only once a week.

7. When a larger dose is taken (8 cgm. iodine a day or more), one day of each week should be left free so that any surplus may be eliminated. The adult eliminates about 50 cgm. iodine (in form of iodide of sodium) per week through the kidneys when the dynamic factor of orthoarteriotony is taken in accordance with the rules.

The above rules are not mere theoretical formulations; the author has tested them clinically, both by means of radialis-arteriotonometry and by urine examination, and they have been found valid.

The following contraindications have been noted by the author for theoretical reasons:

1. High grade of hypertrophy of the heart and valvular lesions.

2. Temperature higher than 99.5° if continued for a long time.

3. Body weight considerably below optimum, if it does not soon increase after beginning the iodine treatment.

THE CHEMICAL CONSTITUTION OF THE ACTIVE PRINCIPLE OF THE IODINE-TANNIN-GLYCERIN COMPLEX.

The properties, chemical, biochemic, and pharmacodynamic which have been described above, support the probability that the iodine in the complex is not present as iodine-anion but as substitute iodine within the radicle of either tannin or glycerin, or both. As long as no derivative of this complex has been produced and investigated, no definite conclusion is permissible in regard to its chemical constitution. To everyone who is qualified to have an opinion in a question of this nature it must be perfectly evident that the constitution of this complex cannot be determined by chemical interaction *in vitro* with substances, the predominant connection of which with either iodine, tannin or both determines decomposition of the complex. However, the present era in pharmacology and therapeutics is characterized by efforts to define medicinal substances in terms of physiological properties or pharmacodynamic action. Clinical therapeutic methods today employ remedial substances the very existence of which is unknown except as concepts of causes producing biological action which can be observed experimentally. In my investigation the iodine complex is only a means to an end and not the end itself. In this connection the chemical constitution is an accessory question which may be safely trusted to the future.

It seems appropriate here to recall to mind the fact that iodoform was discovered by Serullas in 1822, but its chemical constitution was not determined until 1834 by Dumas. Anaesthesia was discovered in 1845—ether by Morton, and in 1846—chloroform by Simpson. The beneficent results of those discoveries were not withheld from clinical therapeutics through discussion regarding the chemical constitution of ether or chloroform, the interpretation of which has undergone some change since the time of the discovery of anaesthesia. Such questions are outside of pharmacology and therapy.

As already stated, I have conducted this investigation with the purpose of solving a problem pertaining to the pharmacological, biochemic, and therapeutic thought-complex. As proven in a previous publication, this problem is now solved, and the results of my investigation may be summed up as follows:

1. I have furnished experimental proof in support of the assumption that an equal amount of one and the same chemical substance produces essentially different medicinal action depending upon whether or not after resorption it is taken up by or chemically reacts upon one or the other of the constituents of the blood or the tissues (iodine—organic molecule or iodine—bicarbonate of sodium).

2. I have discovered a new mode of medicinal action (new form of pharmacodynamic energy) which I have described and which I have proposed to name "orthoarteriotony."

3. My investigation has opened the way for evolving other new modes of medicinal action.

4. The iodine-glycerine-tannin complex, be-

ing described in definite pharmacodynamic and biochemic terms and having definitely known composition, belongs to the few medicinal substances which satisfy the requirements of the most recent pharmacology and therapeutics.

A RECORD OF THE FRACTURES AMONG 10,287 MEN DISCHARGED FROM THE UNITED STATES ARMY DURING NOVEMBER, DECEMBER, AND PART OF JANUARY, 1918 AND 1919.*

BY LIEUT.-COL. ISAAC W. BREWER, M.C., CAMP HUMPHREYS, VA.

The records of the physical examination made of men entering and leaving the U. S. Army are a vast mine of information which is of the greatest value to the general public, as well as to the medical profession. Unfortunately a large part of this data has not as yet been collected and digested and put in form where it can be readily used by those who are in need of such information. During my service in the Army I have endeavored to collect, as far as possible, all data that bore in any way upon the public health, and present them in a form that could be readily used by public health officials.

After the signing of the armistice the medical officers at Camp Humphreys began to examine officers and enlisted men for demobilization. Between that time and January 8, 1919, 10,287 officers and men passed through the Examining Board. In looking over the statements made by these men, I was struck by the fact that a very large number of them said they had previously suffered from fractures of one or more bones. I was so impressed with this that I requested the officer in charge of the examinations, Captain Clyde E. Watson, to tabulate the cases reporting previous fractures. This he and his assistant very kindly did, and I am very much indebted to them for the data here presented. A total of 665 fractures are noted, making a rate of 64.7 per thousand.

TABLE I.

FRACTURES (OLD HEALED) FOUND WHILE EXAMINING 10,287 OFFICERS AND MEN FOR DISCHARGE AT CAMP A. A. HUMPHREYS, VIRGINIA.

BONE FRACTURED	NO. CASES
Humerus	101
Colles'	98
Phalanges (fingers and toes)	73
Clavicle	59
Tibia	55
Femur	52
Pott's	40
Forearm	32
Metacarpal	32
Radius	31
Metatarsal	17
Ulna	16
Elbow	15
Fibula	10
Ribs	9
Tarsus	6
Scapula	5
Skull	3
Sternum	2
Lower maxilla	2
Patella	2
Pelvis	2
Malar	1
Vertebra	1
Wrist	1
TOTAL	665

From this table you will see that in this group 15.2% of the fractures were of the humerus, 14.8% were Colles' fractures, 10.9% were fractures of the phalanges, 8.8% were fractures of the clavicle, 8.2% were fractures of the tibia, 7.7% were fractures of the femur, and 6.0% were Pott's fractures. These figures are not in accordance with the previous experience in fractures of the U. S. Army. The difference may be accounted for by the fact that in many cases the existence of previous fractures was not determined by examination, but was a matter of recollection with the men. Among the rarer fractures we find fractures of the malar bone 1, 2 cases of fracture of the pelvis, and 1 case of fracture of a vertebra.

The data available for this study, of course, gives no information regarding the cause of the fracture. I therefore had recourse to the last published report of the Surgeon General of the Army, which records 6469 fractures during the year 1917. The causes given for these fractures were as follows: Falls, 32.6%; crushing accidents, 8.5%; automobile, 7.6%; by animals, 5.9%. Whether the same proportions hold good in civil life it is impossible at this time to state from the data at hand. However, it calls attention to the seriousness of this class of accidents, and shows the importance of measures to prevent such accidents. The prevention of accidents is a new conception of public health work which has only recently received the attention of the health authorities. However, it is one which deserves very careful consideration. It is very probable that in the records of the examinations made by the Draft Boards some very valuable information on this subject will be obtained.

* Published by permission of The Surgeon General of the Army.

PNEUMONIA AND EMPYEMA.

By 1st Lieut. Horace Gray, Medical Corps, U. S. Army.

[From Medical Service, Base Hospital, Camp Devens, Mass.]

(continued from page 269.)

13. Primary Pneumonias. These made up 88% of the series. Their mortality was strikingly low, only 12%. They developed empyema only half as frequently as post-measles-pneumonias, and when they did get empyema, the mortality was only half that among the measles-pneumonia-empyemas.

Table VII. Primary Pneumonia.

Period 35 Weeks from Sept. 27, 1917, through May 31, 1918.

Average strength of command	29,613
Total cases pneumonia all causes	485
No. cases primary pneumonia	427
Percentage of primary pneumonia out of total	88%
No. cases primary pneumonia fatal	50
Case mortality primary pneumonia	12%
Case mortality of 485 pneumonias, all causes	13%
No. of primary pneumonias to get empyema	63
Percentage of primary pneumonias to get empyema	15%
No. of primary pneumonias to get empyema and die	23
Case mortality of these primary-pneumonia-empyemas	37%
Case mortality of 77 empyemas, all causes	44%

14. Measles in Consecutive Hundreds of Pneumonia.

a. It seemed desirable to divide pneumonia into consecutive groups for comparison; hundreds were chosen in order to make percentages simple.

b. Of the first 100 pneumonias, 24 were due to measles; presumably because of much greater frequency of measles during that period. The largest figure in any of the four succeeding periods was 9%.

c. Measles cases developed pneumonia *twice* as often during the second period as during any other: in the second period 20% of the measles cases got pneumonia, while the maximum in any other period was 12%. However, during the first period there were nine and one-half times as many measles cases, this greatly reducing the element of chance. This applies to the third period in which measles did not occur as an etiological factor in a single instance. In a subsequent report upon measles at this base hospital this subject will be discussed in detail.

d. Measles-pneumonia developed empyema twice as often during the first period as during any other.

e. Query how far this severity during October, November, December and January was due to season and how far to variation in virulence of the prevalent organisms.

Table VIII. Measles, Pneumonia and Empyema.

Pneu. Cases	Period	Measles during Same Period	Meas. Cases in Each Period to Get Pneumonia		Cases Meas.-Pneu. in Each Period to Get Empyema	
			No.	Per	No.	Per
1-100	Sept. 27, 1917—Feb. 13	418	24	6%	11	46%
101-200	Feb. 14, 1918—Mar. 19	44	9	20%	2	22%
201-300	Mar. 20, 1918—Apr. 8	22	0	0	2	0
301-400	Apr. 9, 1918—May 3	25	3	12%	1	33%
401-485	May 4, 1918—May 31	79	5	6%	0	0
	Sept. 27—May 31	588	41	7%	14	34%

Table IX. Measles-Pneumonia.

Of 485 pneumonia cases	444 did not have measles	= 92%
	41 were preceded by measles	= 8%
Of the 444 cases without measles, 51 died		= 11%
Of the 41 cases with measles, 13 died		= 32%
Total mortality, 64		= 13%
Of the 588 measles cases, 41 developed pneumonia		= 7%

Table X. Measles-Pneumonia.

Period of 35 Weeks, from Sept. 27, 1917, through May 31, 1918.

Average strength of command	29,613
No. cases measles	588
No. cases pneumonia after measles	41
Case incidence of pneumonia in measles	7%
Total cases pneumonia, all causes	485
Percentage of measles-pneumonia out of total pneumonias	8%
No deaths in these pneumonias after measles	13
Case mortality in these pneumonias after measles	32%
Case mortality of 485 pneumonias, all causes	13%
No. empyemas after measles-pneumonia	14
Percentage of measles-pneumonia to develop empyema	34%
No. deaths in these empyemas after measles	11%
Case mortality in these empyemas after measles	79%
Case mortality of 77 empyemas, all causes	44%

The *interval* between the onset of measles and the onset of pneumonia was:

a. Less than 2 weeks in 66% of the measles cases.

b. 18 days on the average.

c. The latter figure is surprisingly large, especially in view of the figure under *a*. Its size is due to the inclusion in the series, of 5 pneumonias occurring 6, 7, 9, 11, and 13 weeks after measles. Although these were literally post-measles-pneumonia, it may be questioned whether

at this distance they were really due to the measles. The 5 cases were, however, retained in the series owing to the difficulty of drawing a line. If they be excluded, the average for *b* becomes 14 days.

TABLE XI. INTERVAL BETWEEN ONSET OF MEASLES AND ONSET OF PNEUMONIA.

	No. Cases	
Less than 24 hours	2	
(1-) 2 days	0	
(2-) 3 "	4	
(3-) 4 "	1	27
(4-) 5 "	6	
(5-) 6 "	0	
(6-) 7 "	4	
(1-) 2 weeks	10	
(2-) 3 "	5	
(3-) 4 "	4	
(4-) 5 "	0	
(5-) 6 "	1	
(6-) 7 "	1	
(7-) 8 "	0	
(8-) 9 "	1	
(9-) 10 "	0	
(10-) 11 "	1	
(11-) 12 "	0	
(12-) 13 "	1	
	41	

15. Post-Ether Pneumonia comprised only 4% of the series. Not one of these 17 cases occurred on the ear, nose and throat service, perhaps because of the shorter duration of anesthesia. These 17 formed 1.2% of all the ethers given This may be compared with the varying percentages: Silk 0.26 of 5,000 cases; Norris 0.35 of 139,000 cases; Gebele 6.4 of 1,196 cases. "That anesthetics and operations may not infrequently be unjustly blamed, is shown by such cases as have been reported by Gould and Da Costa, in which unsuspected pneumonia was accidentally discovered just before etherization" (Norris in Osler-McCrae, I, 237).

TABLE XII. PNEUMONIA SECONDARY TO ANESTHESIA.

PERIOD OF 35 WEEKS, FROM SEPT. 27, 1917, THROUGH MAY 31, 1918.

Average strength of command		29,613
Total cases pneumonia, all causes		485
No. cases post-ether pneumonia (none in oto-laryngological service)		17
Percentage of postether pneu. out of all pneu.		4%
No. operations with ether anesthesia:		
Otolaryngological	291	1,451
General operating room	1,160	
Case incidence of pneumonia out of all ethers		1.2%
No. deaths in these pneumonias		0
No. empyemas after these pneumonias		0

The *operations* were: Appendicectomy, 6; herniotomy, 8; varicocele excision, 1; axillary abscess incision, 1; circumcision, 1; total, 17;

The *intervals* between anesthesia and pneumonia onset: (a) Averaged 3 days. (b) Was less than 48 hours in 65% of the cases.

TABLE XIII.

Less than 24 hours ..... in	3	11 = 65%
(1-) 2 days	8	
(2-) 3 "	2	
(3-) 4 "	0	
(4-) 5 "	2	
(5-) 6 "	1	
(6-) 7 "	0	
(7-) 8 "	0	
(8-) 9 "	1	
	17	

The *interval* between the onset and the diagnosis of pneumonia has been unduly long in some of these post-operative cases just as in the series in general.

a. Average diagnosis made 2.5 days after onset.

b. Diagnosis within 48 hours after onset in 71% of the cases.

TABLE XIV. INTERVAL BETWEEN ONSET AND DIAGNOSIS.

Less than 24 hours	5	12 = 71%
(1-) 2 days	7	
(2-) 3 "	2	
(3-) 4 "	0	
(4-) 5 "	2	
(5-) 6 "	0	
(6-) 7 "	0	
(7-) 8 "	1	
	17	

There is justification in the noteworthy fact that pneumonia was generally suspected from the sudden rise in temperature and respirations, yet on physical examination, no râles could be found on cough. In two of these cases in which Captain Bagnall happened to be the medical consultant, the only physical finding was remarkable dullness and dim breath sounds, but without râles or bronchovesicular breathing, a complex suggesting fluid rather than the pneumonia, which, however, became clear after a couple of days.

16. Onset. As to *manner of onset,* two views are in the literature: (a) "An *abrupt* onset is the rule . . . in 80 % of (his) cases with exact data." (Norris, p. 220.) (b) "In a considerable number of cases the onset is *gradual,* with a number of days or even weeks of coryza or mild bronchitis preceding the actual onset of the pneumonia. This is why all cases with such symptoms should be carefully watched and any exacerbation of symptoms should at once raise the question of the possible

onset of pneumonia." (Cole, R., "Medical Clinics of North America," Nov., 1917, I, 546.)

The latter view is supported by the data in this series of 485 cases: 1. Average day of diagnosis,—*4th* day of the disease.

2. Only 31% of patients gave a distinct story of brisk onset.

The *prodromes* most often noted here were the usual ones: pain in side of chest involved (only once seen opposite), anorexia, headache, malaise, tonsillitis, cough.

The following textbook *symptoms* were seldom or never noted in the records: abdominal pain or vomiting, restlessness, delirium, convulsions, somnolence or insomnia; parotitis or epistaxis; shallow resp., expiratory grunt, dyspnoea or cyanosis.

17. Date of Diagnosis of Pneumonia.

a. Only 55% of the 485 cases were diagnosed within the first *three* days of the disease.

b. 27% more of the total number were diagnosed during the fourth, fifth and sixth days of the disease.

c. *18%* of the cases were not diagnosed till more than a week after onset. This was apparently due partly to the frequency of abortive cases, which in civil life are often called a bronchitis, or perhaps a "threatened pneumonia," and partly to the overlooking of the great indicator value of even slightly rapid respiration.

d. The average diagnosis was not made till the fourth day of the pneumonia.

TABLE XV. DIAGNOSIS OF PNEUMONIA.

Day of Disease on which Diagnosis of Pneumonia was Made	No. Cases	
1st	82	265 = 55%
2nd	103	
3rd	80	
4th	56	133 = 27%
5th	50	
6th	27	
7th	26	87 = 18%
8th	17	
9th	11	
10th	7	
11th	4	
12th	6	
13th	4	
14th	3	
15th	4	
16th	0	
17th	0	
18th	4	
19th	0	
20th	1	
	485	=100%

(To be continued.)

American Medical Biographies.

ELMER, JONATHAN (1745-1817).*

The family of Elmer in New Jersey was descended from Edward, who came to America with the company of forty-seven that comprised the church of the Rev. Thomas Hooker, in Cambridge, Mass., in 1632. Edward is believed to have been a grandson of John Aylmer, educated at Oxford, a protestant, and a tutor of the unfortunate Lady Jane Gray. He was made Bishop of London by the name of John Elmer.

Jonathan, the son of the Rev. Daniel, was born at Cedarville, Cumberland County, New Jersey, November 29, 1745, and died at Bridgeton, September 3, 1817. He was one of the ten who first received the degree of Bachelor of Medicine from the University of Pennsylvania. Three years after, he was given the degree of Doctor of Medicine in the same university (1768). Being from the first of feeble health, he was disabled early in life for active exertion and therefore confined himself very much to study, being a laborious and diligent student. Besides his knowledge of medicine he was well read in law and theology. In personal appearance he was slender and erect; neat in his dress, and stately in his address. He possessed a firm and unbending selfwill, which was perhaps intensified by his secluded habits. At the time of his decease, L. H. Stockton, Esq., in a short notice of him in the *Trenton Federalist*, said that "in medical erudition the writer remembers his illustrious contemporary, the late Dr. Rush, frequently said that Dr. Elmer was exceeded by no physician in the United States." He was elected a member of the New Jersey Medical Society, only recently founded, in 1772. This society held no meetings during the war, from 1775 to 1781. Dr. Elmer was elected president of the rehabilitated society in 1787, the year prior to his election to the United States Senate, and delivered two "Dissertations" before the meetings of that body. These dissertations, entitled "On the Chemical Principles of Bodies," and "On the Different Properties of the Air Contained in the Atmosphere," were published in the Transactions.

On the breaking out of the war Dr. Elmer laid aside the duties of his chosen calling and became

* From the forthcoming "American Medical Biography," by Dr. Howard A. Kelly and Dr. Walter L. Burrage. Any important additions or corrections will be welcomed by the authors.

an ardent friend of regulated liberty. He was Whig sheriff when in November, 1774, a company of disguised men burned the tea stored at Greenwich. Although he was supposed to know who were the culprits he did not apprehend them. He was appointed delegate to the Provincial Congress, was a member of the Legislature of the state and was in the National Senate.

The following extract from the Journal of William Maclay, a fellow Senator in 1789, throws light on his character:

"I know not, in the Senate, a man if I were to choose a friend, on whom I would cast the eye of confidence as soon as on this little doctor. He does not always vote right—and so I think of every man who differs from me, but I never saw him give a vote, but I thought I could observe his disinteredness in his countenance. If such an one errs, it is the sin of ignorance and I think Heaven has pardons ready sealed for every one of them."

While in Congress Dr. Elmer was placed on the medical committee, visiting in this relation the various hospitals within reach by long journeys on horseback, and it was on one of these journeys that he met his brother, Surgeon Ebenezer Elmer, at the military hospital at headquarters, Morristown, when the brother was on his return from his northern campaign.

A very neatly written and legible letter from Dr. Elmer as president of the New Jersey Medical Society, dated Trenton, 22nd January, 1788, to the president of the Massachusetts Medical Society is preserved in the archives of the latter society.

Dr. Elmer held the office of presiding judge in the Court of Common Pleas in Cumberland County, which he resigned in 1814, on account of increasing age and infirmity, remarking to his associates, as he took his final leave of them, that it was forty-two years since he became an officer of the court, and he had lived to see every person who was a member of it, both on the bench and at the bar, consigned to the house appointed for all the living.

He died at the age of 71 and was buried in the Bridgeton cemetery.

WALTER L. BURRAGE, M.D.

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Medical Legislation.

TEXT OF THE AMENDED HARRISON ACT.

SECTION 1. That on or before July 1 of each year every person who imports, manufactures, produces, compounds, sells, deals in, dispenses, or gives away opium or coca leaves, or any compound, manufacture, salt, derivative, or preparation thereof, shall register with the collector of internal revenue of the district his name or style, place of business and place or places where such business is to be carried on, and pay *the* special taxes *hereinafter provided;*

Every person who on January 1, 1919, is engaged in any of the activities above enumerated, or who between such date and the passage of this Act first engages in any of such activities, shall within 30 days after the passage of this Act make like registration, and shall pay the proportionate part of the tax for the period ending June 30, 1919; and

Every person who first engages in any of such activities after the passage of this Act shall immediately make like registration and pay the proportionate part of the tax for the period ending on the following June 30th;

Importers, manufacturers, producers, or compounders, $24 per annum; wholesale dealers, $12 per annum; retail dealers, $6 per annum; physicians, dentists, veterinary surgeons, and other practitioners lawfully entitled to distribute, dispense, give away, or administer any of the aforesaid drugs to patients upon whom they in the course of their professional practice are in attendance, shall pay $3 per annum.

Every person who imports, manufactures, compounds, or otherwise produces for sale or distribution any of the aforesaid drugs shall be deemed to be an importer, manufacturer, or producer.

Every person who sells or offers for sale any of said drugs in the original stamped packages, as hereinafter provided, shall be deemed a wholesale dealer.

Every person who sells or dispenses from original stamped packages, as hereinafter provided, shall be deemed a retail dealer: *Provided,* That the office, or if none, the residence, of any person shall be considered for the purpose of this Act his place of business; but no employee or any person who has registered and paid special tax as herein required, acting

within the scope of his employment, shall be required to register and pay special tax provided by this section: *Provided further,* That officials of the United States, Territorial, District of Columbia, or insular possessions, State or municipal governments, who in the exercise of their official duties engage in any of the business herein described, shall not be required to register, nor pay special tax, nor stamp the aforesaid drugs as hereinafter prescribed, but their right to this exemption shall be evidenced in such manner as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, may by regulations prescribe.

It shall be unlawful for any person required to register under the provisions of this Act to import, manufacture, produce, compound, sell, deal in, dispense, distribute, administer, or give away any of the aforesaid drugs without having registered and paid the special tax as imposed by this section.

That the word "person" as used in this Act shall be construed to mean and include a partnership, association, company, or corporation, as well as a natural person; and all provisions of existing law relating to special taxes, as far as necessary, are hereby extended and made applicable to this section.

That there shall be levied, assessed, collected, and paid upon opium, coca leaves, any compound, salt, derivative, or preparation thereof, produced in or imported into the United States, and sold, or removed for consumption or sale, an internal-revenue tax at the rate of one cent per ounce, and any fraction of an ounce in a package shall be taxed as an ounce, such tax to be paid by the importer, manufacturer, producer, or compounder thereof, and to be represented by appropriate stamps, to be provided by the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury; and the stamps herein provided shall be so affixed to the bottle or other container as to securely seal the stopper, covering, or wrapper thereof.

The tax imposed by this section shall be in addition to any import duty imposed on the aforesaid drugs.

It shall be unlawful for any person to purchase, sell, dispense, or distribute any of the aforesaid drugs except in the original stamped package or from the original stamped package; and the absence of appropriate tax-paid stamps from any of the aforesaid drugs shall be *prima facie* evidence of a violation of this section by the person in whose possession same may be found; and the possession of any original stamped package containing any of the aforesaid drugs by any person who has not registered and paid special tax as required by this section shall be *prima facie* evidence of liability to such special tax: *Provided,* That the provisions of this paragraph shall not apply to any person having in his or her possession any of the aforesaid drugs which have been obtained from a registered dealer in pursuance of a prescription, written for legitimate medical uses, issued by a physician, dentist, veterinary surgeon, or other practitioner registered under this Act; and where the bottle or other container in which such drug may be put up by the dealer upon said prescription bears the name and registry number of the druggist, serial number of prescription, name and address of the patient, and name, address, and registry number of the person writing said prescription; or to the dispensing, or administration, or giving away of any of the aforesaid drugs to a patient by a registered physician, dentist, veterinary surgeon, or other practitioner in the course of his professional practice, and where said drugs are dispensed or administered to the patient for legitimate medical purposes, and the record kept as required by this Act of the drugs so dispensed, administered, distributed, or given away.

And all the provisions of existing laws relating to the engraving, issuance, sale, accountability, cancellation, and destruction of tax-paid stamps provided for in the internal-revenue laws are, in so far as necessary, hereby extended and made to apply to stamps provided by this section.

That all unstamped packages of the aforesaid drugs found in the possession of any person, except as herein provided, shall be subject to seizure and forfeiture, and all the provisions of existing internal-revenue laws relating to searches, seizures, and forfeitures of unstamped articles are hereby extended to and made to apply to the articles taxed under this Act and the persons upon whom these taxes are imposed.

Importers, manufacturers, and wholesale dealers shall keep such books and records and render such monthly returns in relation to the

transactions in the aforesaid drugs as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, may by regulations require.

The Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall make all needful rules and regulations for carrying the provisions of this Act into effect.

Section 2 deals with the sale, barter, exchange, or giving away of any drugs other than those distributed in pursuance of a written order of the person to whom such article is sold, bartered, exchanged, or given, on a form to be issued in blank for that purpose by the Commissioner of Internal Revenue.

Section 3. That any person who shall be registered in any internal-revenue district under the provisions of section one of this Act, shall whenever required so to do by the collector of the district, render to the said collector a true and correct statement or return, verified by affidavit setting forth the quantity of the aforesaid drugs received by him in said internal revenue district during such period immediately preceding the demand of the collector, not exceeding three months, as the said collector may fix and determine; the names of the persons from whom the said drugs were received; the quantity in each instance received from each of such persons, and the date when received.

Section 4. That it shall be unlawful for any person who shall not have registered and paid the special tax as required by section one of this Act to send, ship, carry, or deliver any of the aforesaid drugs from any state or territory or the District of Columbia, or any insular possession of the United States, to any person in any other state or territory or the District of Columbia, or any insular possession of the United States: *Provided*, That nothing contained in this section shall apply to common carriers engaged in transporting the aforesaid drugs, or to any employee acting within the scope of his employment, of any person who shall have registered and paid the special tax as required by section one of this Act, or to any person who shall deliver any such drug which has been prescribed or dispensed by a physician, dentist, or veterinarian required to register under the terms of this Act, who has been employed to prescribe for the particular patient receiving such drug, or to any United States, State, county, municipal, district, territorial, or insular officer or official acting within the scope of his official duties.

Section 5 provides for the inspection by officers, agents, and employees of the Treasury Department duly authorized for that purpose duplicate-order forms, prescriptions, statements, and returns.

Section 6. That the provisions of this Act shall not be construed to apply to the manufacture, sale, distribution, giving away, dispensing, or possession of preparations and remedies which do not contain more than two grains of opium, or more than one-fourth of a grain of morphine, or more than one-eighth of a grain of heroin, or more than one grain of codeine, or any salt or derivative of any of them in one fluid ounce, or, if a solid or semisolid preparation, in one avoirdupois ounce; or to liniments, ointments, or other preparations which are prepared for external use only, except liniments, ointments, and other preparations which contain cocaine or any of its salts or alpha or beta eucaine or any of their salts or any synthetic substitute for them: *Provided*, That such remedies and preparations are manufactured, sold, distributed, given away, dispensed, or possessed as medicines and not for the purpose of evading the intentions and provisions of this Act: *Provided further*, That any manufacturer, producer, compounder, or vendor (including dispensing physicians) of the preparations and remedies mentioned in this section shall keep a record of all sales, exchanges, or gifts of such preparations and remedies in such manner as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall direct. Such record shall be preserved for a period of two years in such a way as to be readily accessible to inspection by any officer, agent, or employee of the Treasury Department duly authorized for that purpose, and the State, territorial, district, municipal, and insular officers named in section five of this Act, and every such person so possessing or disposing of such preparations and remedies shall register as required in section one of this Act and, if he is not paying a tax under this Act, he shall pay a special tax of $1 for each year, or fractional part thereof, in which he is engaged in such occupation, to the Collector of Internal Revenue of the district in which he carries on such occupation as provided in this Act. The provisions of this Act as amended shall not ap-

ply to decocainized coca leaves or preparations made therefrom, or to other preparations of coca leaves which do not contain cocaine.

Section 7 relates to the assessment, collection, remission, and refund of internal-revenue taxes. Section 8 states that it shall be unlawful for any person not registered under the provisions of this Act, and who has not paid the special tax provided for by this Act, to have in his possession or under his control any of the aforesaid drugs. Section 9 deals with the penalties which must be suffered by any person who violates or fails to comply with any of the requirements of this Act. Section 10 authorizes the appointment of such agents, deputy collectors, inspectors, chemists, assistant chemists, clerks, and messengers as may be necessary to enforce the provisions of this Act.

Section 11. That the sum of $150,000, or so much thereof as may be necessary, be, and hereby is, appropriated, out of any moneys in the Treasury not otherwise appropriated, for the purpose of carrying into effect the provisions of this Act.

Section 12. That nothing contained in this Act shall be construed to impair, alter, amend, or repeal any of the provisions of the Act of Congress approved June thirtieth, nineteen hundred and six, entitled "An Act for preventing the manufacture, sale, or transportation of adulterated or misbranded, or poisonous, or deleterious foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes," and any amendment thereof, or of the Act approved February ninth, nineteen hundred and nine, entitled an "Act to prohibit the importation and use of opium for other than medicinal purposes," and any amendment thereof.

Section 1008. That all opium, its salts, derivatives, and compounds, and coca leaves, salts, derivatives, and compounds thereof, which may now be under seizure or which may hereafter be seized by the United States Government from any person or persons charged with any violation of the Act of October 1, 1890, as amended by the Acts of March 3, 1897, February 9, 1909, and January 17, 1914, or the Act of December 17, 1914, shall upon the conviction of the person or persons from whom seized be confiscated by and forfeited to the United States; and the Secretary is hereby authorized to deliver for medical or scientific purposes to any department, bureau, or other agency of the United States Government, upon proper application therefor under such regulation as may be prescribed by the Commissioner, with the approval of the Secretary, any of the drugs so seized, confiscated, and forfeited to the United States.

The provisions of this section shall also apply to any of the aforesaid drugs seized or coming into the possession of the United States in the enforcement of any of the above-mentioned Acts where the owner or owners thereof are unknown. None of the aforesaid drugs coming into possession of the United States under the operation of said Acts, or the provisions of this section, shall be destroyed without certification by a committee appointed by the Commissioner, with the approval of the Secretary, that they are of no value for medical or scientific purposes.

Book Review.

A Textbook of Home Nursing. EVELEEN HARRISON. Second Edition. New York: The Macmillan Company. 1918.

During the last four years, throughout the entire civilized world, has come a greater call for nurses than ever before; and in order that this call be answered, thousands of women highly trained in the nursing profession have left civil life to enter military organizations for service. In consequence of this, the demand to "carry on" in civilian homes has been met by women, who, though lacking the practical experience of the professional nurse, can learn to execute orders in an intelligent manner under the direction of the doctor.

Such a guide as the author has outlined in this volume should prove a helpful one to the lay woman who endeavors to make herself a good "home nurse." In the twelve chapters of the book there is much that is of practical value. Without going into technical details of professional nursing, it holds strictly to its title and explains in a clear and interesting manner the choice and preparation of room and bed; atmospheric temperature; ventilation; comforts for the patient; temperature, pulse, respiration; the giving of medicines, baths; symptoms and nursing of infectious diseases, prevention and care of coughs and colds; nursing in grip, bronchitis and pneumonia; nursing of children; preparation of a patient for a surgical operation at home; first-aid emergencies; recipes for invalid cooking and the serving of dainty dishes.

The second edition of this "Textbook of Home Nursing" is well worth consideration.

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REPORT OF THE BOSTON CITY HOSPITAL.

THE fifty-fourth annual report of the Boston City Hospital describes the work during the year 1917-1918 of the main hospital, the South Department for infectious diseases, the Haymarket Square Relief Station, the East Boston Relief Station, the Convalescent Home at Dorchester, and the West Department.

The Boston City Hospital was opened for the admission of patients on June 1, 1864. Since that time, the number of house patients treated in the different departments has been 452,543, and the number of out-patients, 1,763,376. On January 31, 1917, there were 662 patients remaining in the hospital proper. During the year, there were admitted 17,585 patients, including 5,726 for medical and 6,899 for surgical services; 2,126 for gynecological and obstetrical care, 162 for ophthalmic, 1,969 for aural and laryngological, 608 for neurological, and 95 for dermatological service. There were discharged during the year 15,917 patients, and 1,697 persons died, leaving in the main hospital on January 31, 1918, 633 patients. There were 362 births during the year. The largest number of patients in the hospital at any one time was 732, and the smallest, 486, giving a daily average of 606 patients. The ambulance service made 5,632 trips, carrying 5,440 patients in transportation to the hospital and 592 from it.

The X-ray Department has been provided with much new material during the past year. There has been a great increase in the teaching clinic, both to medical students and to officers of the Medical Corps, U. S. A. Most of the teaching in the army X-ray school, located in Boston, has been done in this department. Considerable assistance has been given also to army students taking other courses in the hospital.

In the pathological laboratory, research work has been practically impossible because of the depletion of the medical staff by war service. The routine work has been maintained as usual. The results obtained in the investigation of measles are interesting so far as they go: the cell changes which occur in the lesions of the skin have been discovered, but nothing definite in regard to the etiology of the disease has been determined.

The present capactity of the hospital departments can provide beds for 1,233 patients, of whom 680 can be cared for by the hospital proper, 340 by the South Department, 165 by the West Department (as yet unopened), 24 by the Haymarket Relief Station, 10 by the East Boston Relief Station, and 34 by the Convalescent Home.

The number of visits of patients to the hospital for advice and treatment in the Outpatient Department amounted to 144,167; of these, 11,812 were for medical, and 84,907 for surgical treatment, 6,871 for diseases of the eye, 11,280 for the ear and throat, 4,624 for skin diseases, 4,042 for the diseases of women, 5.747 for diseases of the nervous system, 10,613 for X-ray and radium treatment and examination, and 4,271 for vaccine and serum innoculation.

During the year 3,168 patients were admitted to the South Department; 2,612 were discharged well, 188 relieved, 18 not relieved, and 251 died. The daily average number of patients has been 247.7.

The Haymarket Square Relief Station has

been in existence for 16 years. During this time 546,469 patients have been treated, 27,273 of whom received treatment in 1917-1918.

During the nine years that the East Boston Relief Station has been in operation, 122,428 patients have been treated; 10,918 received treatment during the year.

There were 369 patients admitted to the Convalescent Home during the year.

The Training School for Nurses has completed its thirty-ninth year. During 1917-1918, 32 pupils were graduated and 82 probationers were admitted. Twenty-four nurses have completed obstetrical nursing at the Boston Lying-In Hospital and the New England Hospital, and six are now taking the training. Fifty-six pupils from affiliated schools have completed courses of from three to ten months.

The entire expenditures for all departments of the hospital for maintenance during the fiscal year amounted to $865,615.55. A total amount of $129,805.99 has been received by the hospital from paying patients.

The following changes in rules have been made during the year:

A dental service was established, the following titles being created: a dentist in chief, an assistant dentist in chief, three visiting dentists.

The Neurological Department was separated from the Dermatological Department.

The following committee was chosen to plan and control the method of instruction in the Training School for Nurses: the Hospital Superintendent, the Superintendent of Nurses, and one member of the Senior Staff.

Owing to conditions existing as a result of war, the term of service for medical, surgical, and gynecological house officers was reduced to four periods of three months each.

The hours of treatment of out-patients was changed from "9 to 11 A.M." to "8.30 to 10.30 A.M."

It was voted that during the period of the war the Neurological Out-Patient Department be open only three days each week.

THE AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS.

THE American Board of Ophthalmic Examinations was organized in 1916, after preliminary work extending over three years. In 1913, committees were appointed by the American Ophthalmological Society to report on Ophthalmic education. In 1914, these committees recommended that graduate courses requiring not less than two years of systematic work in ophthalmology, leading up to an appropriate degree, be established in leading medical schools.

The functions of the Board are namely three:

1st. To establish standards of fitness to practise ophthalmology;

2nd. To investigate and prepare lists of medical schools, hospitals and private instructors recognized as competent to give the required instruction in ophthalmology;

3rd. To arrange, control and supervise examinations to test the preparation of those who desire to practise ophthalmology, and to confer a certificate upon those who meet the standards established.

The conferring of a degree is left in the hands of the universities, and the Board makes no attempt to control the practice of ophthalmology by any license or legal regulation. It aims merely to establish a standard of fitness to practise ophthalmology, and to give certificates to any who voluntarily apply for examination and satisfy the Board of their fitness. After 1920, this certificate will be required of all applicants for membership in the American Ophthalmological Society. This certificate is acceptable also by the American College of Surgeons as a credential of professional qualification in ophthalmology. The examinations will be thorough, but not unduly exacting, above present available facilities for preparation to practise. They are designed to test the general competency both of the older practitioner, who may have lost his grasp of details but whose experience has proved his work to be of high character, and of the recent graduate, whose judgment cannot be expected to be so mature as that of an older practitioner. The Board will be glad to suggest courses which will enable those who do not pass examinations to overcome their deficiencies. In some cases, the applicant's professional record may be of such

high standing that a certificate may be granted to him without further examination.

According to the length of time that they have practised ophthalmology, applicants for examination are divided into three divisions—first, over ten years; second, five to ten years; third, less than five years.

High ethical and medical standing in their communities is required of all, also a medical degree satisfactory to the Board. In addition, applicants will furnish a list of papers or books they have published.

Members of division 2 are required to have served a term as interne or as assistant in an eye clinic, or with an ophthalmologist in private work; or in lieu of this, they may submit reports of cases and operations performed.

Division 3 must have served at least a year in an ophthalmic clinic, or as ophthalmic interne or private assistant, and, in addition, must have had a year of special study, covering all important branches of ophthalmology. Not necessarily continuous or all in one school, but shorter periods than three months of study are deprecated by the Board.

After 1920 a year of clinical or laboratory work, preferably in a general hospital following four years in a medical school, will be required of Division 3 preliminary to special study of ophthalmology, and service as ophthalmic interne.

In determining the question of certification, the examiners rely on the following criteria: a practical, clinical, and laboratory examination, a written examination, the applicant's professional record, and written reports. The purpose of this Board is a worthy one, and its efforts to raise the standing of ophthalmology should receive the support and coöperation of ophthalmologists.

BRITISH MILITARY MEDICAL SERVICES IN 1918.

THE fifth annual review of the British military medical services in the war, with tables of casualties and honors, has appeared recently in the *British Medical Journal*.

The mortality among medical officers during four and a quarter years of war, including medical men in all services who have died of wounds, or who were lost at sea by enemy action, are included in the following table:

Year 1914 (5 months)	Killed	46	Died	9	Total	65
Year 1915	Killed	97	Died	45	Total	142
Year 1916	Killed	162	Died	98	Total	260
Year 1917	Killed	200	Died	93	Total	293
Year 1918	Killed	173	Died	163	Total	336
Total	Killed	678	Died	408	Total	1086

In actual numbers, the temporary officers of the R.A.M.C. have the greatest number of deaths, the number killed among these officers being more than four times, and the number of deaths from disease being over double those of any other group. The total number of these officers, however, is far greater than that of any other class.

In 1917, the proportion of deaths to strength was probably higher in the Australian A.M.C. than in any other medical service. In 1918, it has been the Canadians who probably furnish the highest proportionate mortality. The greatest number of casualties have occurred in France and Flanders, though other fronts—Italy, the Balkans, Palestine, Mesopotamia, and East Africa—have all contributed their share. Many deaths from disease have occurred, of course, in England.

In the Royal Navy Medical Service, there were fourteen killed during the year. In the Royal Army Medical Corps, there were thirteen killed and thirteen deaths from disease. Of the Special Reserve, ten were killed; of the Territorial forces, sixteen were killed, and twenty died. Of the temporary medical officers, eighty-six were killed, and fifty-four died.

Among the medical corps of the Dominion forces, losses fell most heavily on the Australians in 1917, on the Canadians in 1918. In 1917 the Australians lost eighteen killed, and five died; in 1918, only seven were killed, and two died. The Canadians, on the other hand, lost twenty killed, and twelve died, as compared with only four and seven in 1917. The twenty killed include six lost at sea, all in the *Llandovery Castle*. Of the New Zealanders, three were killed and one died; the South Africans lost one killed, and four died.

The total number of wounded was 500; there were 105 missing, and 128 prisoners.

In the dental service, two dental surgeons were killed as combatants and three in the British, and two in the Canadian service died.

The number of medical students reported

killed in 1916 was 57; in 1917, 35; in 1918, 16.

In the Indian Medical Service, no officer was reported killed during 1918, but fifteen officers died while serving. Of the Indian Medical Department, three military assistant surgeons died in service. In the African Medical Service, there have been five deaths.

The nursing services have suffered far more heavily in 1918 than in any previous year of the war. Nine members were reported killed, no fewer than thirty-nine were lost at sea, and seventeen were returned as wounded. Six Canadian nurses were killed or died of wounds in the bombing of the Canadian hospitals at Etaples by enemy aircraft on May 25, and six more were wounded on that occasion. The remaining casualties, other than those at sea, were presumably also caused by enemy aircraft. The number who have died of disease has also been very large. The nursing profession, both civil and military, suffered very severely from the influenza epidemic in the last quarter of 1918, probably more severely than any other class of the community, the very high fatality among nurses being presumably due to infection at a period of excessive work.

A total of 1518 honors have been granted during 1918. The most coveted honor of all, the Victoria Cross, was conferred on only two medical officers during the year—Captain J. Fox Russell, T.F. (posthumously) on January 11th, and Captain B. S. Hutcheson, Canadian A.M.C., on December 14th. Ten V.C.s and two clasps have been gained by medical officers during the war; no other clasps, except these two, have ever been given. Out of the total of twelve, four Crosses and one clasp have been won by Territorials, two Crosses and one clasp by temporary officers, to Crosses by Canadians, and one each by the regular R.A.M.C. and the I.M.S.

Every part of the British Military Medical Service has rendered faithful and unselfish service, and in many instances has sacrificed the lives of its members for the sake of humanity.

ANNUAL REPORT OF THE CRAIG COLONY FOR EPILEPTICS.

The twenty-fifth annual report of the medical superintendent of the Craig Colony for Epileptics for the year ending June 30, 1918, was submitted on October 8, 1918.

This institution, located at Sonyea, New York State, is maintained solely by State appropriations. In order to be admitted to the Colony, the applicant must be a legal resident of the State of New York. All are admitted on the same basis, as indigents, and if it is later found that the patient or a relative can reimburse the State in whole or in part, they are expected to do so. Epileptics of all ages are received. Patients who are markedly delinquent or insane are not admitted, and in order to secure a patient's admission it is necessary to consult the Superintendent of the Poor of the County or the Commissioner of Charities of the State in which the applicant lives. Applicants who are mentally incompetent must be committed through a Court of Record.

The policy of the Colony is to explain to the applicant, if he is sufficiently intelligent, that he is going to a hospital for care and treatment such as his condition requires. In a public institution such as Craig Colony, a large number of the applicants are markedly or permanently impaired mentally. Nevertheless, various activities have been undertaken in the way of instruction, etc. A sloyd teacher, an arts and crafts teacher, a band master, and an instructor in making willow ware have been employed. A Red Cross branch of 121 members has been very active in making garments for the soldiers.

The treatment of an epileptic at the Colony embraces such ordinary medical and surgical treatment as may be given. All newly admitted patients receive an ophthalmological examination and a dental examination. As soon as the patient enters the hospital a thorough mental and physical examination is made as a basis for further treatment. As soon as conditions permit it, funds will be available for the purpose of follow-up work with discharged patients. It is believed that many epileptics, if suitable employment were provided, together with advice from time to time, could live in the outside world. Religious services are held regularly in the Colony and recreation and amusement have also been carefully provided for.

Incorporated in the report of the president of the board of managers, is the steward's report, which summarizes in an interesting manner the accounts of the farm garden and dairy,

and the other industries in which the patients have taken a part.

During the year 79% of all the deaths reported were submitted to autopsy under proper authority and the tabulation of cases abstracted, together with clinical records, form an interesting study in pathological research.

BOSTON MEDICAL LIBRARY.

THE forty-third annual report for the year 1918 of the Boston Medical Library is received with interest. The number of readers in the Library has been somewhat diminished because of the absence of many of its members in war service; but medical officers sent from other states for instruction here, women interested in infantile paralysis and in reconstruction work for disabled soldiers, and Red Cross nurses and volunteers have been glad to avail themselves in their study of the privileges which the Library affords. The shortage of coal made it necessary to close the Library at some times when, under normal conditions, it has usually welcomed readers.

There have been fewer medical publications than usual during the past year. Some important German journals, which have been delayed because of the war, have been received; but there are numbers of leading journals for the last two or three years which are still missing. The Committee on Importations has secured a special license from the State Department in Washington to import German scientific periodicals. There were 4,698 books and 518 pamphlets added to the Library during 1918, and a total of 546 current periodicals have been received. The number of memberships, including honorary and life members, Fellows and Associates is now 802. A list of books which have been donated to the Library during the year is included in this report.

GEORGES CLÉMENCEAU.

THE recent attempt upon the life of Georges Clémenceau has recalled the fact unknown to many that this famous French statesman was once a physician, and, furthermore, at one time a teacher in this country. He was born in Mouilleron-en-Pareds, Department of Vendée, on September 28, 1841. In 1861, he went to Paris for the purpose of studying medicine, and remained there for some time after obtaining his doctorate. In 1865, Clémenceau came to America, virtually an exile from Imperial France. He had just completed a term in prison for shouting *"Vive la République"* in the streets of Paris. Upon his arrival in America, he attempted to build up a medical practice in New York, but he was compelled to turn to school teaching to earn his livelihood. In a school for girls in Stamford, Connecticut, he gave instruction in the French language and literature for two and one-half years. In 1869, he married an American girl, Mary Plummer, one of his pupils. Later in his life, he married again, this time a Parisienne.

At the outbreak of the Franco-Prussian War in 1870, Clémenceau borrowed his passage money from a fellow practitioner of medicine and went to Paris, arriving just in time to witness the downfall of Napoleon III and the rise of the third republic. He was appointed Mayor of the Montmartre District, and within a year he had obtained at seat in the National Chamber of Deputies. From that time on, Clémenceau became more and more powerful in French political life. He has twice been Premier of France, and has lived to have gratified his wish, the he "could live to see the end of the war."

SOCIAL RECONSTRUCTION.

A RECENT pamphlet on *Social Reconstruction*, issued by the National Catholic War Council, presents a general review of the problems involved in the social reconstruction following the war, and surveys the remedies which may safeguard peace and social justice. The plans formulated by the British and American Labor Parties, by the British Quaker Employers, and by the representatives of the American employing class give evidence of the magnitude of the problem with which the world is confronted. It is probable that the changes which are to come will not affect the United States so profoundly as they will affect European peoples, and that our reconstruction program will be somewhat less radical than may be adopted in other countries. The industrial replacement of discharged soldiers and sailors, the readjustment of women

in industry, the regulation of wages, housing projects for the working classes, a reduction in the cost of living, social insurance, the participation of labor in industrial management, vocational training, and child labor are some of the aspects of social reconstruction outlined in this pamphlet, and briefly discussed both from the point of view of present defects and of suggested reform.

THE AMENDED HARRISON ACT.

In another column of this issue of the Journal we publish for the benefit of physicians the text of the Harrison Act as amended by the War Revenue Act of 1919. Nothing more is attempted than to give the Act of Congress approved December 17, 1914, as amended by the War Revenue Act, now (Feb. 18, 1919) awaiting the President's approval.

Attention is directed to the new schedule of registration fees; to the definitions of the terms importers, manufacturers, producers, wholesale dealers, etc., found in Section 1; also to the stamp tax provisions found in Section 1. The whole of Section 1 should be read over carefully and repeatedly. That part of Section 6 which begins with the italicized words, "*Provided, further,*" is new and requires particular attention. Section 1008 is new legislation, and only incidentally a part of the Harrison Act. The other sections are the same as in the original act.

This matter concerns physicians, and it is important that members of the profession take careful notice of the amendments to the Harrison Act.

RECORD SYSTEM FOR HOSPITAL SERVICE.

The American College of Surgeons has recently issued two bulletins (Vol. IV., Nos. 1 and 2) describing the preparation and use of an adequate record system for hospital service. The purpose of these pamphlets is to bring hospitals to a realization of the important relation between case records and the success of the hospital. Records serve both as a test of medical honesty and as a means of minimizing errors in clinical practice. Bulletin No. 1 gives a detailed explanation of the record forms which are published in Bulletin No. 2. Suggestions in the use of summary cards, for recording personal histories and physical examinations, charts for reporting conditions of the eye, ear, nose, and throat, and operative, pregnancy, labor, progress, and treatment records are simple and complete, and should be helpful in hospitals.

FORTY YEARS OF PROGRESS IMPERILLED.

In 1879, when General Benjamin Butler was Governor, a Board of Health, Lunacy, and Charity was constituted. Gradually as the people of the Commonwealth came to realize that these public charges could not advantageously be handled by a single common agency, this board was first divided into two and later into three boards. Since then, as every one must realize, the problems of health, charity, and mental diseases have vastly multiplied and enlarged. Experts and specialists have been developed in each of these departments to the great advantage of the public.

Today it is proposed to turn back to the crude organization of Governor Butler's time and unite under one head the Bureau of Prisons, the State Board of Charity, and the Commission on Mental Diseases. Last year the Commission on Mental Diseases was given nearly $7,000,000, or nearly one-fifth of the total appropriations of the State. It cared, in its institutions alone, not counting the thousands of cases seen in out-patient departments, for 19,100 cases, or one case for every 201 of the population during the year 1917. The proposed new Commission would be given approximately $11,000,000, or about one-third of the State's appropriations.

The arguments advanced by the legislative committeemen are two. First,—The Commission on Mental Diseases has been doing a big job satisfactorily; why not make the job bigger and have the penal and charitable institutions equally well handled? Second,—The 19th amendment to the State Constitution recently adopted compels the consolidation of the 107 odd existing commissions into not more than twenty. The Bureau of Prisons, the State Board of Charity, and the Commission on Men-

tal Diseases have interlocking problems, why not bunch them?

The physicians of Massachusetts are perhaps more interested in the problems of mental disease, or mental hygiene, than in the problems of the charitable and penal institutions. Whatever progress the future offers for the amelioration of the burden which the Commonwealth now bears in caring for the insane, feeble-minded epileptic, and mentally sick, lies primarily in the field of preventive medicine. Preventive medicine in mental disease or mental hygiene demands the early recognition and treatment of mental symptoms. Whatever helps to remove from the minds of the people the distrust and dread regarding mental hospitals, and brings incipient mental patients early and voluntarily to the hospitals for treatment is to be furthered, and assuredly will lighten the burdens of the Commonwealth and of its citizens. But any project, whether in the field of dollars or executive coördination, that heightens the distrust and dread of the people as to the care offered by the State Mental Hospitals, and delays the coming of incipient and remediable cases to these hospitals for treatment, must necessarily add to the present and future burdens, both financial and social, that must be borne by the Commonwealth and its citizens.

Can we, as physicians, be content to remain passive while our well-intentioned but poorly-informed legislators in an attempt to go forward are heading backward to the cruder conditions of forty years ago? Can we by our silence approve of such an unfortunate and trouble-breeding mixture of problems of education, custody, and health? Can we say to our legislators: "Go ahead and increase your chance of being shot at by some ill-balanced mental cases that might have been recognized at the out-patient department of the Psychopathic Hospital, if you had not damned that place by grouping it with the places for criminals and paupers. Increase the chance for property damage, suicide, and homicide, by early mental cases if you think you can better coördinate the State institutions."

Can we say to the returning soldiers of Massachusetts, suffering from shell-shock, needing and deserving the best of expert care in our mental hospitals: "Welcome Home! We have a brand new commission for you. It takes care of all the criminals and all the paupers, but it can find time somehow to look out for you, too. If you need to go to jail a sub-commissioner can arrange for that; if you are a pauper another subcommissioner can attend to that; if you are sick and nervously exhausted, that can be fixed somehow. Welcome Home to your grateful Commonwealth!"

MEDICAL NOTES.

HEALTH OF TROOPS IN CAMPS.—During the week ending February 14, there were no epidemics reported in home camps. There were a few cases of influenza, but these were mild in form and showed an improvement over the preceding week. Only two cases of influenza were reported.

A report from the Expeditionary Forces in Siberia indicates that the health of the soldiers in these regions is excellent.

COLUMBIA UNIVERSITY AND THE PRESBYTERIAN HOSPITAL.—In 1911 an alliance was formed between Columbia University and the Presbyterian Hospital, New York, for the purpose of forming in that city a great medical centre. As the university has been unable to obtain the money needed for its share of the buildings and has rejected the plans proposed as the condition of an endowment offered by the Rockefeller Foundation, the alliance has been dissolved.

ST. BARTHOLOMEW'S HOSPITAL.—A History of St. Bartholomew's Hospital, by Dr. Norman Moore, published recently, shows the progress of medical knowledge in London from the twelfth century to the present day. The hospital was founded by Rahere, whose successor was Thomas of St. Osyths. The period from Henry I. to Richard II. shows the early development of medical science. The work of John Cok, the writer of the hospital cartulary, explains the mediaeval estate of the hospital and its transactions with various ancient foundations. In the reign of Henry VIII., the ledgers and journals, which continue to the present day, first appeared. The Elizabethan physicians, Harvey and his successors, and subsequent surgeons form, by their connection with St. Bartholomew's Hospital, chapters in the history of medical progress.

INFLUENZA AND PNEUMONIA IN THE UNITED STATES.—Reports from State health officers for

the week ending February 1, 1919, indicate that the number of cases of influenza was decreasing at that time in most parts of the United States. In California and Louisiana, where extensive recrudescences of the disease occurred in January, there was a notable decrease in the number of cases reported. As compared with the preceding week, reductions in the number of cases were reported from Alabama, Arkansas, California, Illinois, Iowa, Kansas, Louisiana, Maine, New Jersey, Oklahoma, Oregon, Vermont, and Virginia. Slight increases were reported from Connecticut, Florida, Indiana, and North Carolina.

Reports from the zones around army camps also show in general a reduction in the number of cases reported.

A record of deaths due to influenza and pneumonia (all forms) from September 8, 1918, to January 25, 1919, which has been published in the Public Health Report for February 7, 1919, gives a total of 125,562 deaths for forty-six large cities in the United States. The greatest number of deaths occurred in New York City, where 27,362 deaths have been recorded. Philadelphia has registered 14,198; Chicago, 12,400; and Boston, 5,771 deaths.

EARLY ARYAN SCIENCE.—An interesting article describing early Aryan science has appeared recently in the *British Medical Journal*. The achievement of the ancient Hindus in science is a source of wonder and admiration to the modern mind. It is probable that the Chinese, Greeks, and Arabians are all indebted to the Hindus for the knowledge which has been acquired from them. Of course it is not improbable that both Greeks and Hindus derived much of their science from a common prehistoric Aryan source; the Arabians, undoubtedly, owe a great deal to both Greeks and Hindus, and the Chinese probably interchanged with the Indians.

The early medical researches of the Hindus were recorded in the *Ayurveda*, much of which survives in the writings of Charaka and Susruta of much later date. The acquirements, medical and surgical, chronicled by these authors, were perpetuated, practically unchanged, by oral tradition, until the invasion of India by Western nations, especially by the British, introduced the doctrines and methods of rational and progressive medical science.

The Hindu mind is prone to abstraction, speculation, and mythology, and though much exact observation had been made in anatomy by the dissection of animals and men, good descriptions of diseases recorded, many mineral and vegetable drugs empirically discovered and employed, and rough surgical operations practised with rough appliances—still the three supposititious humors, *vayu*, *petta*, and *kofa* (wind, bile, and phlegm), dominated both physiology, pathology, and therapeutics, just as astrology governed and debased astronomy, and alchemy, chemistry.

An interesting book on this subject has recently been published: Hindu Achievement in Exact Science, by Benoy Eumar Sarkar.

RESERVE OF THE UNITED STATES PUBLIC HEALTH SERVICE.—A reserve of the Public Health Service will be maintained for use in time of national emergency. Physicians, sanitary engineers, epidemiologists, pathologists, zoölogists, pharmacologists, bacteriologists, chemists, sanitarians, and others whose qualifications, training, and experience are such as would enable them to perform the duties of the Public Health Service, may become members. The President alone is authorized to appoint and commission as officers in the Reserve citizens who, by examination, have proven themselves qualified, physically, mentally, and morally, to render this service. The grades in which officers are appointed in the Reserve are determined by the qualifications, training, and experience in their special lines of work which they reveal in the examination.

The duties which Reserve officers may be required to perform are those of the Public Health Service, and are broad and varied in character. They include the care of patients in hospitals under the control of the service, the examination of arriving alien immigrants at ports of entry, service at sea on board coast guard cutters, work in connection with the conduct of national quarantine stations, the prosecution of campaigns against epidemic diseases, the carrying out of research work in the hygienic laboratory and in the field, the study of various factors in the protection of the public health in all parts of the nation, and coöperation with State and local health authorities.

In order that Reserve officers may receive training which will familiarize them with the work of the Public Health Service and prepare them for the duties to which they may be assigned in time of emergency, it is contem-

plated, in so far as practicable, to order them as on active duty, for a period not exceeding one month each year, to a school of training in an approved institution or station located convenient to the districts in which they reside. The training thus gained will also prove of great value to the officers in their regular work.

By holding a commission in the Reserve of the Public Health Service an officer renders himself liable to considerable personal sacrifice, but gains the opportunity to perform a patriotic duty by holding himself in readiness to serve whenever and wherever called. The experience acquired while on active duty and the association with other officers, many of whom are experts in their special lines of work, are advantages which compensate in some degree for the temporary character of the duty.

CONTROL OF VENEREAL DISEASE.—The United States Public Health Service has appealed to every member of the medical profession to cooperate in the control of venereal disease. In a letter issued to the physicians of the country, the following statements have been made:

"There is danger of an alarming spread of venereal disease during the reconstruction period. Prior to demobilization, the tense morale of the fighting forces is bound to relax. When mustered out, the men will return to conditions in civilian life which have been responsible for venereal disease. Prompt measures must be taken to meet the situation.

"Among the striking things disclosed by Army statistics is the value of proper methods of control as developed in the treatment of venereal cases in the service, The same methods of control will prove equally effective when applied to venereal cases among civilians."

A bulletin accompanying this letter presents the testimony of the Army, emphasizes the importance of maintaining industrial efficiency, and urges physicians to recognize their responsibility.

"From the time the United States entered the war in April, 1917, to September, 1918, the loss to the Army from venereal disease represented 2,295,000 days of service.

"Immediately following the declaration of war, the Army Medical Department organized to cope with venereal disease, and one of the first points emphasized by its Surgeon General was that each individual case must be treated under competent medical supervision until cured. He laid special emphasis on two points:

"1. The ineffectiveness of self-treatment by the use of simple or patent remedies.

"2. The danger of quack doctors, who advertise to treat so-called private diseases.

"Nineteen months of war have shown conclusively the value of proper methods of treating venereal cases in the Army.

"For the protection of the fighting men as they return home, and to maintain maximum industrial efficiency, venereal disease among the civilian population must be kept under control. There is the same necessity for proper methods of treatment as existed in the service.

"Physicians have a large share in the responsibility of protecting the nation in this emergency, by giving their best scientific attention to individual venereal disease cases. Industry does not have a nation-wide medical organization similar to that of the Army. The responsibility rests on the individual physician.

"Each member of the medical profession should understand the seriousness of statements frequently made that a majority of physicians refuse to treat venereal diseases, and that many of those who do treat them are careless in their methods of treatment.

"This is probably one reason for the continued spread and existence of venereal disease, for which the medical profession must assume responsibility. As a result of the refusal by a large part of the profession to give the problem proper study and attention, venereal diseases have become a headliner for quackery and self-treatment, neither of which is safe or effective.

"Venereal disease is a scourge which menaces the industrial efficiency of the nation, and the United States Public Health Service believes that physicians should understand the seriousness of the situation and their responsibilities in meeting it.

"Thousands of retail druggists are responding to the request of the Government that they discontinue the sale of remedies for the self-treatment of venereal disease. They have agreed to direct customers to competent physicians or venereal clinics.

"The Government asks each member of the medical profession what he is going to do in this emergency. Will each venereal case be given the care and attention which it demands as a serious menace to the health and efficiency of the community, or will quackery and ineffective self-treatment be permitted to help keep alive the sources of venereal disease infection?

"The answer of the medical profession to these questions will determine largely whether venereal diseases among the civilian population are to be brought under control."

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending February 22, 1919, the number of deaths reported was 275 against 298 last year, with a rate of 18.01 against 19.81 last

year. There were 45 deaths under one year of age against 50 last year.

The number of cases of principal reportable diseases were: Diphtheria, 51; scarlet fever, 40; measles, 13; whooping cough, 11; typhoid fever, 2; tuberculosis, 58.

Included in the above were the following cases of non-residents: Diphtheria, 4; scarlet fever, 1; typhoid fever, 1; tuberculosis, 2.

Total deaths from these diseases were: Diphtheria, 5; scarlet fever, 1; typhoid fever, 2; tuberculosis, 27.

Included in the above were the following non-residents: Diphtheria, 1; typhoid fever, 1; tuberculosis, 3.

Influenza cases, 250; influenza deaths, 32, of which three were non-residents.

Influenza in Boston and Massachusetts.—On February 18, 52 new cases of influenza, with 6 deaths, and 9 cases of pneumonia, with 9 deaths, were reported to the Boston Health Department. On February 19, there were reported 45 cases of influenza, with 4 deaths, and 9 pneumonia cases, with 5 deaths. On February 21, 28 cases of influenza, with 1 death, and 3 cases of pneumonia, with 9 deaths, were reported.

Hospital Ward at Women's Reformatory.—A fire in the Women's Reformatory at Sherborn resulted in a loss of approximately $5,000. The nurses and matrons removed to places of safety thirty patients in the hospital ward.

Quincy Hospital Fire.—A fire in the administration building of the Quincy City Hospital caused a damage of $1,000. The fire did not spread to the wards, however, in which there were fifty-two patients. Twenty-five nurses and physicians were ready to remove the patients, but this was not necessary.

Return of Colonel Harvey Cushing.—Colonel Harvey Cushing, director of the United States Army Base Hospital No. 5, has returned home, after completing two years of service abroad. Colonel Cushing returned on the *Canopic*, which left Brest on February 8.

Base Hospital No. 5 was composed of doctors and nurses from the Peter Bent Brigham Hospital. They left Boston on May 7, 1917, for Fort Hamilton, N. Y., and subsequently sailed for France. This unit is sometimes called the "Harvard Unit," a title which should be reserved for the original Harvard Unit, which sailed for France nearly four years ago. In a previous issue of the Journal it was erroneously stated that Colonel Harvey Cushing was at one time at the head of the Harvard Unit, with which he had no connection at any time.

Colonel Cushing's service with the Peter Bent Brigham Hospital Unit has won for him a high rank among military surgeons in the fighting area. He made many successful operations on British and American soldiers at Messines Ridge, Chateau-Thierry, St. Mihiel, and on the Argonne front. His achievement resulted in his appointment as chief neurological surgeon of the American Expeditionary Forces.

Obituaries.

SIR HERMANN WEBER, M.D., F.R.C.P.

Sir Hermann Weber, M.D., F.R.C.P., died at his residence in London on November 11, in his ninety-fifth year. An account of his life and achievement has appeared recently in the *British Medical Journal*.

Sir Hermann Weber was born on December 30, 1823, the son of a German father and an Italian mother. His early years were spent on the farms successively held by his father in Bavaria and Hesse-Cassel. He went to school at Fulda and received his medical education first at Marburg and afterwards at Bonn, where he graduated M.D. in 1848. His desire to read Shakespeare in the original led him to study the English language, and he was therefore prepared to accept the post of house-physician at the German Hospital, Dalston, to which he afterwards became physician and consulting physician. He desired to remain in England, and in 1854 married an English woman.

He determined to practise as a physician in London, and after a period of study at Guy's Hospital he became a member of the Royal College of Physicians in 1855. The position he had already obtained is shown by the fact that he was elected a Fellow four years later. He was the oldest surviving Fellow of the College. Much of his success, both as a physician and as a member of the profession in London, was due to his extraordinary charm of manner; no one could be in his company for even a few

minutes without coming under the spell. Among his friends in the early days in London were Addison, Edmund Parkes, Wilson Fox, and Hilton Fagge. His affection and admiration for Parkes led him in 1895 to present to the College a sum of £3,000 to found a prize to be awarded every third year to the author of the best essay upon some subject connected with the etiology, prevention, pathology, or treatment of tuberculosis. The prize, appropriately named the Weber-Parkes Prize, has been awarded on five occasions.

Hermann Weber was particularly interested in the treatment of consumption, and he was among the first to advise patients to go to Switzerland for the winter months. He spent many of his holidays in the Swiss, Tyrolese, and Italian Alps, and was a member of the Alpine Club. In 1885 he gave the Croonian Lectures before the Royal College of Physicians on the hygienic and climatic treatment of phthsis, and contributed several articles on related subjects to Quain's Dictionary and Albutt and Rolleston's System of Medicine. He placed his knowledge of health resorts at the disposal of the profession in a volume entitled the Mineral Waters and Health Resorts of Europe, afterwards replaced by a volume entitled Climatotherapy and Balneotherapy, written in association with his son, Dr. F. Parkes Weber.

Hermann Weber received the honor of knighthood in 1899. He was a censor of the College of Physicians in 1879-80; he was consulting physician to the Royal National Hospital for Consumption at Ventnor, to the North London Consumption Hospital, to the German Hospital, and a member of the consulting committee of King Edward VII Sanatorium; he was also an honorary or corresponding member of a large number of learned societies.

HERBERT DOUGLAS TAYLOR, M.D.

THE death of Lieutenant Herbert Douglas Taylor, M.C., U. S. Army, is recorded in *Science* for October 25, 1918.

Dr. Taylor, though but 30 years of age at his death, had made many important studies and had published several papers relating to malignant tumors, tuberculosis, and bio-chemical problems involved in the safer and more effective use of antiseptics in military surgery. A graduate of St. John's College, Annapolis, Maryland, he received his medical degree at the Johns Hopkins Hospital in 1914. During the following three and one-half years he was associate in pathology and bacteriology at the Rockefeller Institute for Medical Research.

Soon after the United States entered the war, Dr. Taylor was commissioned as first lieutenant and gave generously of his time and energy in order to convey to other medical officers instruction in the Institute Laboratory Courses at the War Demonstration Hospital. He was one of a group of young workers at the Institute who have made great personal sacrifices in the line of duty, and it was while carrying on this work at the Hospital that he apparently became infected with influenza, with pneumonia coming as a rapid sequel. He died on the third day of his illness.

A master in those phases of scientific medicine in which he was interested, he was also a man of high ideals and of boundless enthusiasm, and was an inspiring comrade.

NOTICE.

THE AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS.—The American Board for Ophthalmic Examinations will hold its next examination at the Wills Eye Hospital, Philadelphia, June 6 and 7, 1919.

The examination next June will be the fifth to be conducted by the Board. This Board is composed of representatives of the American Ophthalmological Society, the Section on Ophthalmology of the American Medical Association, and the Academy of Ophthalmology and Oto-larynology. By arrangement with the American College of Surgeons, the Board has become the Ophthalmic Credentials Committee of the College, and conducts the examinations of the ophthalmic candidates for Fellowship in the College.

For a certificate of this Board, the examination in ophthalmology consists of: first, case-records; second, written examinations; and third, clinical laboratory and oral examinations.

a. Candidates in ophthalmology are required to submit twenty-five complete case records of which not more than ten should be descriptive of operations. These records should be of cases of ocular diseases and defects of varied character, including errors of refraction or muscle balance; external ocular diseases or diseases of the uveal tract or retina, or of the optic nerve, or glaucoma. The reports should show especially the reasons for the diagnosis, and for the operative treatment and the technique of operations.

b. The written examination will test the candidate's knowledge of the underlying principles of the science of ophthalmology, including anatomy, embryology, physiology, physiologic optics, pathology, relations of the eye to the other organs and diseases.

c. The oral examination will include:

The external examination of the eye.

Ophthalmoscopy.

Measurements of errors or refraction.

Testing of the ocular movements and fields of vision.

Relations of ocular conditions to diseases of other parts of the body and their treatment.

Laboratory examination in histology, pathology, and bacteriology of the eye.

Further information may be had upon request from the Secretary, Dr. William H. Wilder, 122 South Michigan Avenue, Chicago, Illinois.